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# "Double" Taxation of Dividends

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THE FUNCTION of the economist sometimes appears to be to make simple matters complex by giving difficult answers to easy questions. The fault, however, may not lie entirely with the economist. Human beings, at least in the economic sphere, have a strong propensity for referring questions to a set of precepts which they have absorbed from their environment and for finding answers based on these precepts without regard to rational analysis. This approach is appealing because it yields a simple answer to any question. The correct policy action then appears to suggest itself almost automatically.

When an economist insists on bringing rational analysis into the picture, the problem which had appeared so simple before often turns out to be quite complex. Policy determination, even when over-all goals are known, may then be a very difficult matter. Furthermore, the whole analysis faces psychological rejection by the general public because of the complexity, and unless the weight of the evidence is overwhelming, will, in fact, be rejected. One is tempted to say that human beings prefer an easy answer even if they suspect it to be wrong to a difficult one which they suspect may be correct.

This essay is concerned with a specific economic problem which fits well the category described above. We may begin with the unqualified statement

of so authoritative a source as *The Economic Report of the President* (1954):

At present, income resulting from investment in the shares of American business corporations is doubly taxed, first in the hands of the corporation that earned it, and again in the hands of the stockholder who receives cash dividends from the corporation on his shares. . . . The unfair discrimination against investment in stocks creates difficulty for smaller businesses in raising money, and tends to divert venture capital into relatively riskless investments. (p. 79)

Since the present corporate income tax ranges from 30 to 52 percent of net profits and the personal income tax reaches 91 percent in the top bracket, we might suppose that this "double taxation" would have led smaller businesses to avoid the corporate form entirely. This has not been the case. In fact, the reverse is true, the tendency being for many family or closely owned businesses to shift from the single proprietorship or partnership form of organization to the corporate form. We might conclude from this that whatever may be the income tax disadvantages of the corporation the advantages in other ways outweigh them.<sup>1</sup> If we were to adopt a "benefits" theory of taxation, we could leave the matter here since a corporation charter is the result of the benevolence of a sovereign gov-

<sup>1</sup> One is reminded of Ambrose Bierce's definition of a corporation as "An ingenious device for obtaining individual profit without individual responsibility."



ernment. When we come to examine the matter further, however, we find positive tax advantages in the corporation and these, no doubt, largely explain the trend to the corporate form on the part of small businesses. Surely it is an Alice-in-Wonderland world in which a plea is made to reduce the tax disadvantages said to be pressing on the small corporation when this small corporation has come into existence, in many instances, solely to improve the tax position of its owners.

Even if we were to admit that individual businesses may gain taxwise by incorporation, there would still remain the more serious charge that the corporate tax structure "... tends to divert venture capital into relatively riskless investments," for a dynamic, growing economy will require the assumption of risks by business enterprisers and if no one is willing to undertake these risks the economy will not grow.

An examination of the facts as presented in the same *Economic Report* leads to the discovery, however, that in the decade and a half preceding the *Report* the American economy made greater strides forward than in any previous historical period of the same length. Yet the combined corporate and personal income tax rates were never higher than during this same period. Per capita disposable (after-tax) income, after adjustment for price changes, was 50 percent higher in 1953 than in 1929. Private investment in manufacturing and mining (where the corporate form is most common) has been running since World War II far ahead of the boom year of 1929. By 1953 such investment, after deflation for higher prices, was about double that

of 1929. Both corporate and personal income tax rates were extremely low in 1929. Finally, profits of corporations, after the payment of corporate income taxes, have averaged over 10 percent of the stockholders' equity<sup>2</sup> for most of the post-World-War-II years.

### The Arithmetic of Corporate Profit Taxation

The actual effect of the present corporate and personal income tax laws on the stockholders of corporations may be advantageous or disadvantageous depending upon a myriad of factors. The most important of these factors are the income, if any, which an owner derives from sources outside the business, the total profit of the business (especially whether it is above \$25,000), the proportion of the profit which is retained in the business, and whether or not the owner is also employed in the business.

The appendix to this article examines some of these factors through an arithmetical example. This example shows clearly how varied can be the results of the present corporate and personal income tax laws. The two equal owners of a small business find that using the corporate form of organization instead of a partnership and "plowing back" all profits can *reduce* the total income taxes on one partner's share of the profits by two-thirds while *doubling* the

<sup>2</sup> The whole matter of "stockholder equity" — its significance for various purposes, how it is to be computed, how it is affected by inflation or deflation — is beyond the scope of this article. It is worth commenting, however, that, as in the case of "double taxation of dividends," the problem is far more complex than many persons think it to be. Our figure is taken from the President's 1954 *Economic Report* and is, apparently, based on "book value."

total income taxes on the other partner's share. On the other hand, if the business pays out all its profit to its owners (instead of retaining all or part of it), both owners lose by using the corporate form.

These simple exercises in the arithmetic of corporate and personal income taxation do not, of course, begin to cover all the possibilities. If we varied the part of the corporation's income-after-tax paid out in dividends, or if we varied the individual stockholder's income position before receiving his dividends, we would obtain a whole range of possible situations falling between the extreme situations illustrated by our example. We can, from the example, reach these two conclusions: *one*, the combined effect of the corporate income tax and the personal income tax on dividends may be to increase or to decrease the amount of the profit of a business going to the Federal government in the form of income taxes, and *two*, the greater the "other" income of a taxpayer, the greater the tax benefits he may gain from the present corporate and personal income tax structure.

This is, of course, nothing new to the income tax experts. A recent work euphemistically entitled *Tax Shelter in Business*<sup>3</sup> says,

Getting a business underway, the owners

<sup>3</sup> By William J. Casey and Jacquin Bierman (New York: Institute for Business Planning, Incorporated, 1955). Since it is difficult to imagine how an institute for business planning could make financial commitments of such size as to require the limited liability feature of the corporation, it is instructive to inquire why such an institute (apparently composed of tax experts) uses the corporate form.

may be interested in charging possible losses against other income. To do this they may use a proprietorship, a general or limited partnership.

Then *when earnings come, they may want the ceiling rate provided by a corporation* so that they can retain earnings to meet growing working capital requirements. (p. 5; italics added)

It is also worth noting that the tax advantages of the corporation to a stockholder, if they exist at all, will be greater, the larger the part of profit which is retained in the corporation. This would appear to encourage the diversion of corporate profits into relatively risky investments (that is, further expansion of the business) rather than into the relatively riskless investments to which the President's *Report* referred.

The analysis has already gone far enough to allow this general conclusion: it is not possible to say that there is, for every stockholder, ". . . unfair discrimination against investment in stocks . . ." On the contrary, some persons who derive income from stockholdings may gain advantages thereby which are not available to those whose income is derived from businesses organized as proprietorships or partnerships or from other sources such as salaries, royalties, and rents. Like most dogmatic statements on economic matters, "double taxation of dividends" is far from a complete explanation of a difficult problem.

### Further Considerations

If the corporation stockholder is to get his hands on his share of the corporation's profit, it appears that dividends will have to be paid and thus be



subject to tax. Some stockholders, however, are interested in building up an estate and would be happy to have the profits retained by the corporation until their death. In this case only the estate tax need be paid, but this, of course, applies to the estates of all, not just to the estates of stockholders. In any event, the exemptions under the estate tax are far higher and the rates far lower than under the personal income tax when one considers the annual nature of the latter. A second possibility is that the retained earnings may increase the value of the corporation's stock which may then be sold at a profit which would be subject, not to the personal income tax, but to the capital gains tax whose *maximum* rate is not much higher than the *minimum* personal income tax rate. Finally, dividends may, indeed, be paid, but in a different tax year than the one in which they were earned. The over-all personal income tax rate structure may be lower at that time. If the stockholder controls the corporation, the timing factor becomes particularly important, for he may then select the years in which large dividends are to be paid. These may be years of low personal tax rates or years in which the stockholder's "other" income is small or even negative (for example, after retirement, a year of loss in another business, heavy medical expenses, or an uninsured casualty loss).

It is, of course, true that the corporate income tax law forbids use of the corporate form for tax avoidance purposes, that is, it is illegal to retain profits in the corporation solely for the purpose of avoiding the personal income tax on dividends. But this aspect of the

law is seldom effectively enforced and probably cannot be, for violation is primarily a matter of the motive for a particular act, not the act itself, and motive is notoriously difficult to establish in such cases. It is not unusual for a corporation to retain 50, 75, or even 100 percent of its profits in a particular year without running afoul of the tax authorities if it is careful of legal formalities.

Up to this point our whole analysis has been based upon an implicit assumption that the corporate income tax represents a simple reduction of the profits available to the stockholders of a corporation. Even with this assumption we saw that it was not possible to say, realistically, that the corporate and personal income tax laws discriminated against income from ownership of stock compared with income derived from some other source.

But how good is this assumption that, if the corporate income tax were removed, the profits of corporations would be higher by the amount of the abolished tax? Since World War II, the profits of corporations *after paying the corporate income tax* have been averaging in the neighborhood of 10 percent of the stockholders' equity in the corporations. Profits before the corporate income tax have been in excess of 20 percent of the stockholders' equity. During most of the same period the interest rate on top-grade corporate bonds was well under 3 percent.

Under these circumstances it appears reasonable to assume that, in the absence of a corporate income tax, there would have been a much greater incentive for new firms to enter business

fields where the corporate form predominates.<sup>4</sup> But this additional competition would certainly reduce profits all around for the old firms as well as for the new. With the corporate income tax rate on a semipermanent basis of about 50 percent, it is certainly reasonable to suppose that the decision by a new firm on entering an industry will be based to a considerable degree on the expected profit *after* payment of the corporate income tax. It is possible, therefore, that one effect of the corporate income tax is to discourage the growth of competition in the American economy. At the same time that the present tax structure may be forcing an old corporation to expand (by retaining profits) it may be discouraging the entry of new firms into the industry. Thus, the needs of an expanding market will be met by the growth of present firms rather than by the entry of new ones.

The foregoing analysis suggests a part of the answer to an extremely complex question: Who, in fact, bears the burden of the corporate income tax — stockholders, employees, customers, or suppliers?<sup>5</sup> Perhaps each group

bears a part of the burden, but what part? There is certainly no reason to suppose that the whole burden is borne by any one of these groups nor that the burden is shared in the same way for each corporation and each industry. This sharing will depend upon a complex set of factors which will not be discussed here.

Finally, in the absence of the corporate income tax, the Federal government would find it necessary to obtain funds elsewhere, by borrowing or by additional taxation in other areas. What changes would this necessitate in present Federal taxes; what new taxes would be called forth? Clearly, it is not possible to answer such hypothetical questions with certainty. Yet the answers would be necessary to any complete analysis of the problem.

What began as a simple proposition — that the owners of corporations are discriminated against under the corporate and personal income tax laws — has turned out to be an immensely complex one. Some stockholders find disadvantages in this "double taxation," others reap very great advantages. Furthermore, the even more crucial question of the resting place of the real burden of the corporate income tax cannot be answered with any certainty. About all we can be sure of is that it will be different with different corporations.

Why do we have a corporate income

<sup>4</sup> In many areas of American enterprise today, the minimum capital requirement for entering the industry is so large that the corporate form of business organization may be taken to be a necessity.

<sup>5</sup> Any thorough discussion of the burden of the corporate income tax would extend this essay unduly. The reader is referred to the discussion in John F. Due, *Government Finance* (Homewood, Ill.: Richard D. Irwin, 1954), pp. 232-38, and references cited there.

We may note in passing that the Automobile Manufacturers Association apparently thinks the entire corporate income tax of the automobile companies is borne by the pur-

chasers of automobiles. See *Automobile Facts and Figures*, 1953 edition (Detroit: Automobile Manufacturers Association), p. 41. Needless to say, industry leaders did not make this argument to the Congress when favored treatment for dividend income was under consideration.



tax anyway? The legal fiction that the corporation is a "person" leads to the notion that it should pay income taxes as individuals do. But legal fictions do not alter economic realities and the appeal which this argument may have for a lawyer does not seem very persuasive to an economist. There is a more practical reason, however. Most stockholders have little or no control over the corporations which they technically own and in the case of a number of large corporations actual control lies with the management group whose stockholdings, if any, are purely incidental to their position in management. For this reason, if stockholders were to be taxed on their share of the profits of corporations regardless of the cash dividends paid, some stockholders, through no decision of their own, would find themselves owing a personal income tax greater than their cash income — an impossible situation from both the administrative and political points of view. The corporate income tax appears in this light to "get at" income that otherwise might escape income taxation entirely.

Before we try to find a solution to this problem, it would be well to ask what *kind* of solution we hope to attain. It should not be one which requires us to determine the *locus* of the burden of the corporate income tax, since this is not possible with any accuracy and would be different from corporation to corporation. The best we can hope for is a solution which would put income from corporate profits on the same footing for income tax purposes as unincorporated business profits. To that extent we will have

approached the ideal of taxing all income on the same basis. Yet we cannot require the stockholder to pay the tax since, if a large part of the corporation's profit is retained, the stockholder may, literally, not have the money to pay the tax.

### Summary

In most public discussion, the taxation of corporate income appears to be a very simple matter. The corporation makes a profit. The government levies a corporate income tax on this profit. The corporation pays dividends out of what is left. The government levies a personal income tax on these dividends. Therefore, the income of corporations is taxed twice. This is an extra burden borne by stockholders and is unfair discrimination. The government is taking two dips out of the stockholder's bucket and one dip out of everyone else's.

Upon closer examination, however, it appears that some stockholders find the present tax structure (without considering the favored treatment dividends now receive) a very useful device for avoiding personal income taxes that cannot be avoided by other taxpayers with different sources of income.

When other relevant questions were raised — who bears the burden of the corporation income tax? where and how would the Treasury raise the necessary funds if income taxes on stockholders were reduced? does the corporate form gain special advantages from its creation by government which warrants double taxation (if the latter exists, in fact)? — the simple matter became immensely complex. In one sense, we are led to say that there is



no solution to the problem for there may well be no tax structure practical to administer which would be "fair" even if we all could agree on what was fair. In another sense, however, there must be a solution, for the government must have funds with which to operate and this forces us to make decisions embodied in tax laws as to the sources of these funds.

Unless one has faith that we will reach the right decisions even if for the wrong reasons, it is important that we reject the simple answer when it is the wrong answer or not the whole answer to a complex problem. This places upon all of us the arduous mental task of thinking through difficult problems. It places an additional responsibility upon the economist in the sphere of economic matters—the responsibility for explanation. Discharge of this responsibility is not likely, however, to enhance the popularity of economists with the general public.

### Appendix on the Arithmetic of Corporate Profit Taxation

The varied effects of the present income tax structure on the owners of business can be shown best by a few simple examples. Let us assume a particular small business which has earned a profit in the past year of \$20,000. The business has two owners, each of whom owns a one-half share in the business. Owner A has income from sources other than this business which is sufficient to place him in the 90 percent bracket under the personal income tax. Owner B has no income except that derived from the business.

#### Case I. Business organized as a partnership.

A's tax position:

A's share of partnership profits	\$10,000
Less personal income tax at 90%	9,000
A's share after taxes	\$ 1,000

B's tax position (assuming B is married and he and his wife are under 65):

B's share of partnership profits	\$10,000
Less personal income tax at 20% and 22% <sup>6</sup>	1,636
B's share after taxes	\$ 8,364

These tax computations will not be affected by the amount of profit which is retained in the business. The personal income tax does not "see" a partnership but looks through it to the partners as persons and assesses an income tax on each partner's share of the profit *whether or not any of the profit is paid out in cash to the partners*. There is no income tax on the partnership as such.

#### Case II. Business organized as a corporation. No dividends paid.

The corporation's tax position:

Profit before taxes	\$20,000
Less corporate tax at 30% <sup>7</sup>	6,000
Profit after tax	\$14,000

A's tax position:

A's share of profit	\$10,000
Less A's share of corporate tax	3,000
A's share of profit after tax	\$ 7,000

B's tax position:

B's share of profit	\$10,000
Less B's share of corporate tax	3,000
B's share of profit after tax	\$ 7,000

<sup>6</sup> Based on B's taking the standard deduction.

<sup>7</sup> Above the first \$25,000 of profit the corporate income tax rate becomes 52 percent. The example given here of the small corporation is important, however, because of the frequent plea for favored tax treatment for dividends on the grounds that the present tax laws are particularly harsh in their effect on small corporations.

A comparison of the two owners' tax positions as partners and as stockholders when no dividends are paid shows the following:

A's tax as a partner	\$ 9,000
A's tax as a stockholder	<u>3,000</u>
A's tax <i>saving</i> through corporation	\$ 6,000
B's tax as a partner	\$ 1,636
B's tax as a stockholder	<u>3,000</u>
B's tax <i>loss</i> through corporation	\$ 1,364

*Case III.* Business organized as a corporation. All profits after payment of corporate income tax paid out in dividends.

The corporation's tax position:

Profit before taxes	\$20,000
Less corporate tax at 30%	<u>6,000</u>
Profit after tax	\$14,000

A's tax position:

A's share of profit	\$10,000
Less A's share of corporate tax	<u>3,000</u>
A's share of profit after tax	7,000
A's dividends	\$ 7,000
Less A's personal income tax on dividends <sup>8</sup>	<u>6,300</u>
Left to A after corporate and personal taxes	<u>\$ 700</u>

B's tax position:

B's share of profit	\$10,000
Less B's share of corporate tax	<u>3,000</u>
B's share of profit after tax	\$ 7,000
B's dividends	\$ 7,000
Less B's personal income tax on dividends <sup>8</sup>	<u>1,042</u>
Left to B after corporate and personal taxes	<u>\$ 5,958</u>

A comparison of the two owners' tax positions as partners and as stockhold-

ers when all profits after the corporate tax are paid out in dividends shows the following:

A's tax as a partner	\$9,000
A's share of corporate tax	\$3,000
Plus A's personal tax on dividends	<u>6,300</u>
A's total tax as stockholder	<u>9,300</u>
A's tax <i>loss</i> through corporation <sup>9</sup>	\$ 300
B's tax as a partner	\$1,636
B's share of corporate tax	\$3,000
Plus B's personal tax on dividends	<u>1,042</u>
B's total tax as stockholder	<u>4,042</u>
B's tax <i>loss</i> through corporation	\$2,406

A further possibility suggests itself. If the stockholders are also employed in the business, a frequent situation in the small corporation, they may be able (if possessed of little or no outside income) to pay themselves salaries (a deductible expense for the corporation) sufficient to raise their personal income to the 30 percent bracket and then retain the remaining profits of the business in the corporation. This will establish a ceiling rate of 30 percent on their income from the business if the profits remaining to the corporation do not exceed \$25,000. This ceiling will rise with the profits of the business but no higher than 52 percent. The tax authorities are as aware of this as the tax advisers and compensation in such cases must be for work performed and in line with the value of the services.

<sup>8</sup> Since we are interested in the question of whether dividends should receive favored treatment under the personal income tax law, these computations are made without allowing for such treatment as is presently permitted.

<sup>9</sup> Note that A could have received as much as \$6,667 in dividends before he would find the corporate form less advantageous for tax purposes than a partnership.



But compensation, like retention of profits, can follow no fixed rule and consequently there will be a wide area in which salaries can be adjusted with income tax effects in mind.

When we consider the large corporation with profits far in excess of \$25,000, we can take the effective rate of the corporate income tax as 52 percent. For stockholders of such corporations the

critical question is, of course, whether they have other income which places them in or above the 53 percent bracket of the personal income tax. This would mean a personal income, at a minimum, slightly less than \$40,000 for a married couple. The actual "break-even point" would depend, of course, upon the deductions and exemptions available to each taxpayer.





# Unionization as a Factor Affecting Metropolitan Wage Levels

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THE INFLUENCE of union power on wages has been the subject of a continuing and only partially resolved controversy. On the one hand, those who scoff at the economic power of unions assert that wages get to be what they are whether unions bargain them upward or not. On the other hand, it is claimed that without the pressures of union wage bargaining, wage rates determined by the "higgling of the market" fall far below their appropriate level because of an imbalance between the power of the parties involved in wage determination. Brushing aside the polemics of the partisans, a problem remains to be resolved.

A calculating appraisal of the effects of unions on wages is a necessary first step in breaking through the superficialities of those who assert that "it's obvious that unions raise wage levels." Likewise, this evaluation may serve to shake the complacency of the myopes who state that collective bargaining makes no difference. But a great deal of significance stems from a positive finding. The workingman, confronted with the alternatives of joining a union, not joining it, or resisting the union

shop, has a stake in an objective evaluation (even though he does not attend scholarly meetings nor read academic journals). The employer is concerned, too, not only from the standpoint of his costs, but also because of the possible feedback effects of higher wages on morale and efficiency. The general public, which includes workers and employers but acts with less self-interest, has approved legislation by the Federal and state governments to foster unions and collective bargaining and to protect and control many union and management activities. The significance of the problem discussed here to each of these groups and to others makes it of more than academic interest.

This paper attempts to cast light on this set of questions not only by deductive reasoning but also by empirical observation and measurement. First, some clarification of concepts is provided as background for the analysis. Second, a theoretical framework is briefly described which incorporates those attributes of metropolitan economies which influence the operations of urban labor markets. Third, quantitative measurements of the attributes are made and discussed. Finally, the significance of these findings is briefly evaluated.

One modest step toward understand-

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\* The author is indebted to the Committee on Scholarly Advancement, Bowling Green State University, for making funds available which facilitated the completion of the computations used in this article.

ing the relationships between unionization and wage levels can be made by taking an intent look at the concepts which are under discussion. Union power is no matter of energy, mass, and physical force, subject to rigid laws of action and reaction; rather it is a resultant of complex social, psychological, economic, and political forces acting in concert. Union power is not necessarily synonymous with the scope and magnitude of union membership, for union leaders sometimes act without support to gain union objectives. At other times, the actions of the rank and file are synchronized through some common bond, and without leadership or in spite of it, power is brought to bear. But union power does operate within limits. There are sanctions, in the form of potential governmental control, against getting away with too much. Actual controls and restrictions in our existing legislation and labor laws also are effective. Finally, there are the economic limits of long-run no-profit points. In this study, it is necessary to abstract from these complexities in the interest of quantification. In order to express union power as an index, availability has overshadowed conceptual perfection. The proportion of workers covered by union contract, a statistic provided by the Bureau of Labor Statistics in its program of Community Wage Surveys, serves as a measure of unionization.

Clarification of the relationships between union power and wages is furthered by a consideration of several wage concepts that can be used. It is frequently conceded that the *money*

*wage*, the actual dollar amounts received by wage earners, responds to union pressure. But these wage increments are offset, the argument goes, by the increased costs of living which are due to price increases triggered by the wage increases; the *real wage*, money wages deflated by the cost of living index, remains unchanged. For those dissatisfied with the high degree of aggregation implicit in the real wage concept and its consequent inapplicability to specific firms and industries, there is a third concept, the *product wage*. The product wage is the money wage deflated by the price of the good or service produced. This is the empirical counterpart of the marginal revenue product of theoretical analysis. In this paper, the significant analytical problems inherent in using the real wage and product wage concepts are bypassed and the focus is on money wages.

The economic unit that has been subjected to scrutiny in this analysis is the metropolitan region. Interest in metropolitan regions, each encircling an urban metropolitan core, has begun to supersede the analysis of more conglomerate and extensive cultural regions such as the South, New England, the Midwest, the Pacific Coast. The network of metropolitan economies contributes data at a level of aggregation much lower than that of the national economy, and permits the empirical testing of significant theorems from location theory, interregional trade theory, economic development, and labor market theory. The concordance of labor markets with the boundaries of



metropolitan areas provides the basis for a novel and rewarding methodology heretofore unutilized.

A final word in the methodological domain relates to the problems of wage summarization that have been faced in this study. Average wage levels are artificial creations of the researcher made necessary by the magnitude of the range covered by wage payments made to individual workers. The wage levels of metropolitan labor markets reflect the influence, in varying degrees, of the occupational and industrial composition of the employed labor force. In order that differences between metropolitan wage levels might be isolated from the influences of differences in the job and industry mix, standardization procedures were carried out. These standardization procedures were applied to the occupational wage rates, but because of the interrelationship between the occupational mix and the industry wage level, a portion of the influence of industry composition is also neutralized.

### Labor Markets and Metropolitan Economies

Factors which differentiate metropolitan areas from other geographic units are their size, growth, and industrial diversification. The purpose of this section is to boldly sketch the outlines of the processes by which these basic characteristics influence the labor market as it operates in the metropolitan setting. As an introduction to this discussion, it is necessary to recognize the scope and extent of a metropolitan economy. Each such economy consists

of a focal point — a concentrated industrialized urban center — and that surrounding area which has a high degree of interrelationship with the economic functions carried on at the center. Among the many interrelated individual markets that together constitute the metropolitan economy is the metropolitan labor market. This labor market also contains a system of subunits which comprise its structure. The boundaries of the labor market lie in a zone characterized by a tapering off of attachments to the urban economic functions. These attachments reflect the preference patterns of workers for occupations, industries, and work places in the labor market.<sup>1</sup> Standard Metropolitan Areas (SMA's) approximate the more theoretical concept sufficiently well that they may be used as units of observation.

In the tradition of labor market analysis which has developed since World War II, the following treatment deals with wage dispersion, bands of plant wage levels, the impact of union and employer wage policies, big and small firms.<sup>2</sup> To this arsenal of factors are added the influences exerted by SMA characteristics of size, growth, and industrial diversification. In order to simplify the treatment, variations in occupational levels have been disregarded. In effect, this means that occupational wage levels are considered to be subject to "equalizing differences."

<sup>1</sup> W. Goldner, "Spatial and Locational Aspects of Metropolitan Labor Markets," *American Economic Review*, Vol. 45 (March, 1955), pp. 113-28.

<sup>2</sup> See particularly L. G. Reynolds, *The Structure of Labor Markets* (New York: Harper and Brothers, 1951).

### The Factor of Size

It has frequently been observed that wage levels vary with the size of the labor market. Most explanations run in terms of factors which affect labor supply. Lester points to the following factors:

(a) the need for cities to recruit outside labor because the net reproduction rate of the population decreases as cities increase in size,

(b) the greater degree of labor organization and union power in the larger cities, and

(c) the tendency for living costs to be higher the denser the population.<sup>3</sup>

In addition, both residences and work places become spatially concentrated as SMA size increases. This concentration leads to patterns of variation in the journey to work which affect the labor supply propensities of workers.

There are elements related to SMA size that have their effects on the demand side of the labor market. These factors can be summarized under the heading of economies of urban concentration or agglomeration. Some industries require a market of specified size, others *must* locate within a city, including those providing public and governmental services. External economies accrue to many firms able to take advantage of cheaper transportation costs, more flexible use of labor, the availability of specialized banking, insurance, business development, accounting, and legal services. The presence in large communities of large firms, many of which aspire to roles of wage leader-

ship, and others which are characterized by greater profitability and efficiency reinforces the factors already mentioned.

### The Factor of Labor Market Growth

Labor markets grow as new employment opportunities are created. The sources of new jobs are the growth of existing firms and the establishment of new ones in response to locational advantages or, in many cases, in response to governmental policy with regard to the location of public functions. In addition, growth accrues to the firms of an area when its "exports" increase.

The sources of labor supply in metropolitan areas are first, the unemployed, second, persons out of the labor force who may be induced to work, and third, migration into the area from other cities and from the agricultural sector.

Demand factors dominate not only because of the upward secular movement of income, production, and population, but also because this expansion is reinforced by the increasing urbanization of our economy. The movement from farms to cities is a phenomenon which has persisted with almost no interruption since the beginning of the century and will continue into the future.

### The Factor of Industrial Diversification

The factor of industrial diversification is mentioned in this catalog of metropolitan wage influences in order to assert its neutral effect. This contrasts with the important role attributed to industrial concentration by many wage analysts. It has been shown else-

<sup>3</sup> R. A. Lester, *Labor and Industrial Relations* (New York: Macmillan Company, 1951), pp. 59-60.



where that in SMA's of a quarter million population or more, the metropolitan concentration itself guarantees a substantial degree of industrial diversification through its requirements for localized services.<sup>4</sup> The wage effects of such industrial concentration as can be effected in a large standard metropolitan area are negligible and account for a very small portion of the wage differences between areas.

### The Labor Market in Operation

If we abstract from occupational and industrial composition, the large metropolitan labor markets appear to fit the following pattern. Instead of a single rate, there is a substantial range of plant wage levels. At the lower end are firms barely obtaining their labor needs. At the upper end of the distribution are firms who aspire to positions of leadership in the labor market because of ability to pay, coupled with other motivations which qualify outright maximization of profits. The various points within the range of plant wage levels are achieved in accordance with differing views of wage policy. The response of management wage policy to differing external influences in the labor market is the key to an understanding of the average wage level in the metropolitan area.

Variations in rates of unemployment, in actual or potential in-migration, and in the cost of living among metropoli-

tan labor markets have their major impact at the bottom of the band of plant wage levels. In times of full employment, firms in industries using marginal workers are the first to complain that they are having trouble obtaining help. Labor markets surrounded by rural areas which have surplus population, and which are frequently characterized by low productivity, can tap this source of manpower without much difficulty. Variations in the cost of living are translated into some accepted subsistence level which a worker expects to achieve in lieu of using unemployment compensation, or his accumulated savings, or the available public welfare resources.

At the top of the wage band, economies of metropolitan agglomeration serve to move the limit up and down. Firms that have the best opportunities to take advantage of the external economies that accrue in metropolitan labor markets, and can pile these on top of internal economies of various types, are frequently at the top of the band.

Union power is brought to bear upon management wage policies in several ways. First of all, unions engaged in collective bargaining are ever on the march for "more, more, more." Second, unions make it their business to know all the comparable wage rates, and therefore act to make labor market wage information more pervasive. Finally, the presence of unions has an effect on the wage policies of nonunion plants. At the top of the band, unions may have little or no effect; this may be the basis for the assertion that union pressure does not make any difference. At the bottom of the distribution,

<sup>4</sup> W. Goldner, "Factors Affecting the Wage Levels of Metropolitan Labor Markets" (unpublished doctoral dissertation, University of California, 1955), particularly Appendix A3, "The Effects of Occupational and Industrial Standardization on the Metropolitan Wage Level."

union pressures on wage levels may restrict employment, put firms out of business, and trigger the sharpest industrial strife, for at this level, both the union and management are fighting for their very existence.

The bulk of plant wage levels are concentrated, not at the extremes of the area wage band, but between the two limits. It is in this middle sector that union pressure can be most effectively brought to bear. The standards of equitable comparison that unions use to justify their demands serve to crystallize the great variety of management wage policies around a more limited set. Uniformity of policies leads to clusters of wage rates at points in the band. The adjustments to attain these points are usually upward, for unions rarely bargain a rate downward even in the interest of uniformity.

Variations in the degree of unionization lead to differing configurations of plant wage levels in a metropolitan labor market. With only a few plants covered by collective bargaining, the upward movements are not very visible. If a majority of the plants are organized, then the variety of management policies is reduced and a noticeable narrowing of the central cluster of plant wage levels can be observed, although the extremes of the wage band are not necessarily affected. As unionization becomes widespread, the low wage plants disappear or become more efficient and adopt wage policies consistent with the prevailing level of wage rates. The distribution of rates in the labor market is then skewed to the right with a sharp lower limit at

the union contract rate. The area average wage level moves progressively upward with increasing degrees of unionization.

### Testing the Labor Market Model

In 1951-52, the Bureau of Labor Statistics surveyed 40 standard metropolitan areas on a uniform basis. From these surveys, hourly wage data for 17 occupations have been averaged for each area. These averages are occupationally standardized, and therefore represent the average straight-time hourly payment in each area for the same work. The averages ranged from \$1.03 in New Orleans to \$1.68 for the San Francisco-Oakland metropolitan area, a spread of 65 cents.

Upon preliminary inspection, the variations in SMA average wage rates appear to be closely related to the degree of unionization.<sup>5</sup> The correlation between these two variables is .84. However, it is a well-known theorem of the methodology of correlation that a high correlation between two variables may merely reflect the fact that both are correlated with a third and unspecified variable.

In seeking the unspecified variable in preparation for using it in a multiple correlation model, the hypotheses sketched briefly in the previous section provided the starting point. Variables introduced were (1) rural-urban in-

<sup>5</sup> Degree of unionization is measured by the proportion of plant workers in an SMA that are employed in establishments having written agreements with labor organizations, as reported in the BLS Occupational Wage Survey Series, 1951-52.



Table 1. Partial Correlation Coefficients of Specified Order<sup>a</sup>

Order of correlation coefficient	Correlation between $Y_0$ and							
	$Z_1$		$Z_2$		$Z_3$		$Z_4$	
	Sub-script	Coefficient	Sub-script	Coefficient	Sub-script	Coefficient	Sub-script	Coefficient
Zero order.....	01	.8362	02	.4786	03	.6347	04	.5479
First order.....	01.2	.8241	02.1	.4212	03.1	.3243	04.1	.2452
	01.3	.7418	02.3	.4663	03.2	.6274	04.2	.4963
	01.4	.7730	02.4	.4123	03.4	.6247	04.3	.5342
Second order.....	01.23	.7313	02.13	.4378	03.12	.3475	04.12	.2112
	01.24	.7706	02.14	.4046	03.14	.3389	04.13	.2969
	01.34	.6530	02.34	.4158	03.24	.6262	04.23	.4941
Third order.....	01.234	.6539	02.134	.4203	03.124	.3811	04.123	.2670

<sup>a</sup>  $Y_0$ =SMA wage level;  $Z_1$ =unionization;  $Z_2$ =rural-urban income ratio;  $Z_3$ =log SMA population;  $Z_4$ =proportion of employment in durable goods manufacturing.

come ratio,<sup>6</sup> (2) log SMA population, and (3) proportion of workers employed in durable goods manufacturing. The model which includes these variables achieved the best fit as measured by the coefficient of multiple correlation. Other models included variables such as the city worker's budget, value added per worker, estimated immigration in 1949, proportion of basic employment, degree of urbanization, method of wage payment, and rate of unemployment.

Table 1 presents partial correlation coefficients showing the effects of the variables mentioned in the best model

<sup>6</sup> The rural-urban income ratio was computed for each SMA by dividing the median rural family income in the economic sub-region surrounding the SMA by the median family income within the SMA. Rural income distributions are for 1949 as reported in *U. S. Census of Housing: 1950*, Vol. 3, *Farm Housing Characteristics*. SMA median incomes are reported in *U. S. Census of Population: 1950*, Vol. 2, *Characteristics of the Population*, Table 37 in each state volume.

on the relationship between area wage levels and unionization. The gross coefficient of .84 is reduced to .74 when the effect of SMA size is held constant. The other two variables have less influence on reducing the relationship when considered alone. With combinations of two variables held constant, the joint effect of SMA size and the proportion of employment in durable goods manufacturing attenuates the relationship further. All three factors in concert reduce the gross coefficient of .84 to .65. It can be seen that a substantial relationship between unionization and wage rates persists after the other factors are introduced. In fact, unionization remains the most important correlate of the wage rate through all this analysis.

The relationships between unionization and the other variables introduced into this analysis can be evaluated in more detail by noting the additional data in Table 1. The rural-urban in-

come ratio has a correlation of .48 with the metropolitan wage level. The introduction of added variables individually and jointly reduces this coefficient only to about .40. This minor reduction suggests that the rural-urban income ratio is an influence acting independently on the wage level and not one transmitting the influence of other variables indirectly. This supports the observation that rural incomes are related to types of crops whose locations primarily depend on temperatures and soil conditions, and not always on their immediate proximity to adjoining markets. Thus, nationwide influences on crop prices act on rural incomes to move the rural-urban income ratio up or down. The labor mobility or potential labor mobility that results from a low rural income level in the area surrounding the metropolis is the factor that influences the SMA wage level.

A contrasting relationship is displayed by SMA size; the gross coefficient of .63 is substantially reduced by the concordant reaction of SMA size with unionization. Table 1 indicates that holding unionization constant alone or in concordance with the other variables halves the influence of the SMA size variable. Thus, SMA size transmits the influence of unionization indirectly on the wage level and a portion of the influence of SMA size on wage levels is therefore attributable to unionization. This interaction between unionization and SMA size tends to bear out the empirical observation that unionization is frequently concentrated in the larger metropolises to a greater degree than in the smaller ones.

The influence of the durable goods

employment variable on the urban wage level is also substantially intermingled with the effects of other variables. Holding unionization constant reduces the correlation from .55 to .25. There is also a small interacting influence exerted by rural-urban income ratio. On the other hand, SMA size has virtually no effect. The concentration of unionization in durable goods industries is a commonly observed phenomenon which is therefore reflected by these data. The random occurrence of durable goods manufacturing in cities of all sizes is also empirically observable. The slight effect of durable goods employment acting with the rural-urban income ratio on SMA wage levels, although not large enough to ensure significance, may reflect the income effect of the higher-wage durable goods industries on the rural economy surrounding the SMA. Although the previous discussion emphasized the independent influence of the rural-urban income ratio, it is also true that surrounding most metropolitan areas are fruit, vegetable, poultry, and dairy farms whose incomes are linked to the nearby metropolis.

The regression equation provides additional insights into the relationship. For the best model, the equation was:

$$Y_0 = 49.36 + .54Z_1 + .21Z_2 + 1.00Z_3 + .28Z_4$$

(7.96) (.11) (.08) (.41) (.17)

$$R^2 = .797$$

$$\bar{R}^2 = .774$$

in which  $Y_0$  = area average wage rate,

$Z_1$  = unionization,

$Z_2$  = rural-urban income ratio,

$Z_3$  = log SMA population,

$Z_4$  = proportion of employment in durable goods manufacturing,

$R^2$  = coefficient of multiple determination, unadjusted, and

$\bar{R}^2$  = coefficient of multiple determination, adjusted for the number of variables included in the multiple regression.

The figures in parentheses below each coefficient are the standard errors. The coefficient may be considered significant when it is greater than twice the standard error. By this test, the durable goods employment variable is not significant.

The coefficients of the regression equation may be considered as crude coefficients of elasticity. Interpreted this way, a change of ten percentage points in unionization is associated with a change of five cents per hour in the area average wage rate; a 10 point change in the rural-urban income ratio is associated with a two cent change in wage level. An increase of one cent per hour is associated with each 25 percent of increase in SMA population.<sup>7</sup>

### The Significance of These Findings

The data presented here constitute a preliminary report of a more detailed study that is in progress and the conclusions are therefore tentative. Nevertheless, the materials suggest that the area wage level is associated to a high degree with unionization in a metropolitan area. The wide range of area wage levels therefore substantially reflects differing degrees of unionization. Should unionization spread more

evenly through urban centers of the economy, the variation in area wage levels can be expected to decrease.

The possibility that a variable unmentioned here will offset the high apparent relationship between area wage rates and unionization has been considered. Such a variable would have to be correlated highly with wage rates and unionization. For example, let us assume that some area average of labor efficiency could be measured satisfactorily. For labor efficiency to be an important explanatory variable, unionization and efficiency would have to be highly correlated. Or differences in the standard of living (as opposed to the cost of living) might be introduced. Then, high unionization and a high standard of living must be associated.

The other variables which are statistically significant in this analysis merit some comment. The influence of SMA size on the wage rate confirms for large urban centers what has been observed in small and medium-sized cities.<sup>8</sup> The determination of whether the size variable operates through supply or demand factors or both is an important area for further research.

The statistical significance of the rural-urban income ratio in this study also has interesting implications. The relationships show that higher rural incomes are associated with higher metropolitan wage levels and vice versa. The metropolis and the surrounding area are therefore linked together in

<sup>7</sup> In measuring the SMA population, logarithms were rounded to one place beyond the decimal and then multiplied by 10 to simplify computations. Each unit of change in Log SMA population therefore represents a change of logarithm of 0.1000. Each such change in logarithm is associated with a change of 25.9 percent in population cumulated geometrically.

<sup>8</sup> D. G. Johnson, "Some Effects of Region, Community Size, Color, and Occupation on Family and Individual Income," *Studies in Income and Wealth*, Vol. 15 (New York: National Bureau of Economic Research, 1952), pp. 49-66.



their economic prospects. At least in part, potential or actual labor mobility from farm to city in response to substantial income differentials keeps the

metropolitan wage rate down; the income effect of high metropolitan wage rates keeps rural income in the surrounding area up.

# Prefabricated Housing: Problems and Prospects

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IT IS WIDELY KNOWN and lamented that the residential construction industry is the lost sheep of the Industrial Revolution. Despite rather significant strides toward modernization and development in postwar years, the technological and organizational time lags between conventional residential construction and other major industries are overly evident. Prefabricated housing is alleged by many to hold the key to progress and growth in this industry. Prefabrication stands as a potential panacea which, *when* and *if* it develops to maturity, assumedly will bless the American consumer with the heretofore unattainable quality house at a realistic price and simultaneously provide an immense stimulus to the American economy.

The objectives of this paper are basically fourfold: (1) to review briefly the importance and inadequacies of the conventional residential construction industry; (2) to summarize the solution to the housing problem offered by prefabrication; (3) to account for the retarded development of the prefabricated housing industry by discussing problems external and internal to that industry; and (4) to make some speculative statements relative to the current status and future of prefabrication. In pursuing the third and fourth objectives a questionnaire was sent to 63 active producers of prefabricated

houses.<sup>1</sup> Forty-seven firms completed the questionnaire wholly or in part. This constitutes a 75 percent return. Some firms were unable or unwilling to furnish data in response to particular questions. Consequently, the ensuing tables derived from the questionnaire will vary somewhat as to number of respondents.

## Characteristics of Conventional Construction

The basic characteristics of the residential construction industry are fairly well known. First, the industry as such is of prime economic importance, accounting for 3.7 percent of gross national product in 1954,<sup>2</sup> and in addition it occupies a strategic position as a creator of immediate markets for furniture, household appliances, and innumerable other interior furnishings. Sec-

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<sup>1</sup> The writer would like to express his indebtedness to Dr. Edgar Z. Palmer, Chairman of the Department of Business Research, University of Nebraska, and his staff for their invaluable assistance in constructing and carrying out this survey.

<sup>2</sup> Nonfarm private residential construction accounted for an average of 22.3 percent of gross private domestic investment in the 1946-54 period. Calculated from data in *Economic Indicators* (Washington: Government Printing Office), December, 1955, pp. 2, 19. The long-run trend, however, has been for residential construction outlays to decline relative to gross national product. See Louis Winnick, "Housing: Has There Been a Downward Shift in Consumers' Preferences?" *Quarterly Journal of Economics*, Vol. 69 (February, 1955), p. 85.

ond, the industry is subject to severe cyclical and seasonal instabilities. Third, housing construction remains an essentially archaic industry in terms of organization and technology. There are several contributing factors. (a) The industry is composed basically of a large number of small-scale decentralized producers<sup>3</sup> and displays a decided lack of integration and coordination in the cumbersome subcontracting system of production. (b) The cut-and-fit handicraft method of production, remaining largely aloof from technological advance, sustains high costs and construction inadequacies. (c) The strength of consumer individualism, the inability and/or unwillingness of producers to anticipate consumer demand, and a general failure to touch the vast housing market of the lower income groups also foster the archaic nature of the industry.

These factors have resulted in excessively high housing costs. In particular, the industry is apparently unable to produce housing in great volume without increased costs and prices. But still other factors have played a role in keeping housing costs high. The absence of countervailing power, on the buyer's side of the building materials market plus a cumbersome distribution system have kept material costs high.<sup>4</sup>

<sup>3</sup> It is estimated by the Prefabricated Home Manufacturers' Institute that about 96,000 of the 119,000 current housebuilders in the United States construct four houses or less per year. See *Mechanization of Home Building* (Washington: PHMI, March 28, 1955), p. 6.

<sup>4</sup> See National Housing Agency, *Housing Costs: Where the Housing Dollar Goes* (Washington: Government Printing Office, December, 1944), pp. 24, 44. Exclusive of

Labor costs, accounting for about one-third of the total cost of a conventionally built house, are also high. Highly successful bargaining by the various craft unions and the maintenance of a myriad of restrictive work and membership practices have been of importance in this respect.

The net result is this: Despite the postwar housing boom, there is ample reason to believe there still exists a tremendous backlog of consumer need for housing.<sup>5</sup>

### Prefabrication as a Solution The Concept of Prefabrication

The preceding discussion clearly indicates that the present high cost of housing can be traced to a multitude of complex and related forces. This implies the need for a comprehensive approach to cost reduction—an approach that stresses such interrelated factors as volume production, simplification and standardization of the component parts of a house, reorganization of the structure of the industry, and drastic reorganization and mechanization of

land and improvements thereon, the NHA estimates that material costs account for approximately 52 percent of the total cost of a house.

<sup>5</sup> Significant strides have been made in residential construction in the postwar era, the 1954 output figure being 1,220,400 non-farm dwellings. However, estimates of the annual housing need over the next five-year period (1956-60) average slightly less than 2 million houses per year. Available estimates for ensuing years are considerably higher. See J. Laurence Phalan, "The Private Business of Public Housing," *Harvard Business Review*, Vol. 33 (September-October, 1955), pp. 112-3. Winnick, *loc. cit.*, p. 85, argues that in terms of relative significance, the current housing boom is less important than that of the 1920's.



the productive process itself. Prefabrication<sup>6</sup> purports to embody at least a partial answer to the achievement of such cost reductions.

Generally speaking, prefabrication involves an application of the industrial principle of mass production to the realm of house construction. Economies and related advantages are alleged to be manifold and significant. In the first place, there are economies of time: speedy delivery (possibly from inventory), rapid erection, and diminished time losses due to seasonality. Second, economies of mass production may be significant: the ability to cut and fabricate with factory machinery, the possibility of circumventing a chain of middlemen in securing materials, and a more rational division of labor are all relevant in this connection. Third, greater coordination through the abandonment of the subcontracting system may result in significant cost savings. Lastly, one would expect some reduction in seasonality through prefabrication.

This, in brief, is the theory of prefabricated house construction. It rests ultimately on the tacit assumption that mass production and mass consumption of housing is attainable.

### Current Status of the Industry

The prefabrication industry has a relatively long history studded with

hope, optimism, and glowing claims. But fundamental achievement has lagged behind such optimism. Despite bold and imaginative experimentation, the industry was supplying only about one-half of 1 percent of total housing construction on the eve of World War II. The impetus of wartime contracts coupled with Housing Expediter Wilson Wyatt's dramatic pronouncement that the industry must produce some 850,000 units in 1946-47 resulted in considerable growth.<sup>7</sup> Estimates indicate the existence of 200 to 400 more or less active producers in 1946 with rapid shrinkage to 130 firms in 1947, 85 in 1949, and about 50 in 1950.<sup>8</sup> During the 1950's the number of active producers has probably hovered in the neighborhood of 65 to 75.

This postwar decline in the number of producers is not to be interpreted as a sign of decay but rather as an indication of growth and development. The fittest have survived, and in most cases, grown as the weaker have fallen by the wayside.<sup>9</sup> Total production for the in-

<sup>7</sup> The priority ratings for scarce raw materials and the governmental guarantee to buy at cost all prefabricated houses for which no ready buyers could be found which accompanied this proclamation undoubtedly encouraged this expansion in no small way. See Nathan Straus, *Two-Thirds of a Nation* (New York: Alfred A. Knopf, 1952), pp. 57-58.

<sup>8</sup> *Ibid.*, p. 62; Harry H. Steidle, *Review of Prefabricated Housing During 1950 and the Outlook for 1951* (Washington: Prefabricated Home Manufacturers' Institute, December 6, 1950).

<sup>9</sup> Twenty-one of the firms included in the present survey were able to supply accurate production data ranging back to 1950. Production data for these firms are as follows:

Year . . . . .	1950	1952	1954	1955
Total output . .	20,641	24,431	35,266	43,475

Inasmuch as less than 50 percent of the ex-

<sup>6</sup> "A prefabricated home is one having walls, partitions, floors, ceilings and/or roof composed of sections or panels varying in size which have been fabricated in a factory prior to erection on the building foundation." U. S. Department of Commerce, *Prefabricated Homes, Commercial Standard CS 125-47* (Washington: Government Printing Office, 1948), p. 1.

Table 1. Output of Prefabricated Houses, 1946-55

Year	Pre-fabricated houses produced <sup>a</sup>	Total houses produced <sup>b</sup>	Pre-fabricated production as a percent of total
1946...	37,000	670,500	5.52
1947...	37,000	849,000	4.36
1948...	30,000	931,600	3.22
1949...	35,000	1,025,100	3.41
1950...	55,000	1,396,000	3.94
1951...	50,000	1,091,300	4.58
1952...	58,000	1,127,000	5.15
1953...	55,000	1,103,800	4.98
1954...	77,000	1,220,400	6.31
1955...	100,000	1,355,500	7.38

<sup>a</sup> Data for 1946-50 are taken from Nathan Straus, *Two-Thirds of a Nation* (New York: Alfred A. Knopf, 1952), p. 59; those for 1951-55 are taken from Prefabricated Home Manufacturers' Institute, *Mechanization of Home Building* (Washington: PHMI, March 28, 1955), p. 8; 1955 data estimated.

<sup>b</sup> *Construction Review* (Washington: Government Printing Office), December, 1955, Table 6, p. 18; figures include all nonfarm dwellings, both public and private.

dustry in the postwar era reflects considerable, though unsteady, growth (see Table 1). Relative to total housing construction, this growth is somewhat less impressive. The Prefabricated Home Manufacturers' Institute, trade association for the industry, is optimistic, however, predicting that the industry will account for an annual output of 400,000 housing units by 1965.

The relative newness of firms now comprising the industry is evident in Table 2. The median age of the modern prefabricator is 10 years. Firms

isting firms are included in these data, the figures are significant only as a crude indicator of recent growth and not of total production. Yearly data for virtually all 21 respondents reflects fairly steady growth in output.

Table 2. Longevity of 47 Prefabricators

Years in business	Number of firms
25 years or more.....	4
20-24 years.....	7
15-19 years.....	5
10-14 years.....	8
9 years or less.....	23

vary greatly in size and scope of operation. Some firms are independent producers whose operations are confined to prefabrication; others combine prefabrication with conventional construction or the sale of building materials; still others function as subsidiaries of larger corporations. Heterogeneity is also evident in the degree of factory fabrication and method of production, e.g., precut, panel, sectional, or complete assembly, employed by the various manufacturers. Indeed, the distinction between prefabrication and conventional construction in many cases is becoming increasingly nebulous as project builders, employing technological improvements and mass production techniques, grow in importance.

In short, the industry is composed of a heterogeneous group of relatively new firms which display some evidence of recent expansion and development. Yet the industry as a whole has clearly failed to live up to expectations; it has not yet established itself as a significant industry.

### Factors Retarding the Development of Prefabrication

What problems or conditions account for the failure of prefabrication to blossom forth as a new and economically significant industry? Why have

Table 3. Prefabricators' Evaluations of Industry Problems

Problem (1)	Most signifi- cant <sup>a</sup> (2)	Of very great signifi- cance (3)	Of some signifi- cance (4)	Of little signifi- cance (5)	No judg- ment (6)
(1) Antiquated building codes.....	15	18	23	4	2
(2) Inadequate marketing outlets.....	6	14	15	12	6
(3) Public skepticism and ignorance.....	8	13	20	12	2
(4) Too many poorly designed and poorly constructed models on the market.....	0	13	14	16	4
(5) Failure to realize mass-production economies.....	2	10	20	10	7
(6) High transportation costs.....	1	11	19	13	4
(7) Insufficient capital.....	7	9	20	12	6
(8) Opposition of conventional builders.....	0	4	23	15	5
(9) Insufficient research on materials and methods.....	3	4	16	20	7
(10) Absence of dimensional coordination.....	0	4	10	22	11
(11) Opposition of real estate and financial interests.....	1	2	15	25	5
(12) Opposition of labor unions.....	1	1	13	26	7
(13) Lack of cooperation among prefabricators	0	1	10	30	6

<sup>a</sup> Three producers had no opinion as to what single problem was of greatest significance for the industry.

not the potential advantages and economies of prefabrication been realized in practice? Forty-seven prefabricators were asked to evaluate a series of problems ordinarily associated with prefabrication in terms of their relative significance for the industry. (See Table 3.) In addition to rating each problem as being of "very great," "some," or "little" significance (columns 3-5), producers were asked to single out that one problem which they considered to be the most significant of all (column 2). Problems (1), (3), (8), (11), and (12) might be generally classified as external or exogenous problems, i.e., those arising from factors or forces largely outside the industry. The remainder might be termed internal or endogenous, i.e., problems and conditions which are more or less inherent in the very nature or structure of the industry.

### Building Codes

As may be noted in Table 3, prefabricators clearly feel that antiquated and localized building codes are the greatest obstacle to the achievement of widespread distribution of their product. Approximately 2,000 different state and local building codes, which frequently contain conflicting requirements as between neighboring cities and states, have been enacted.<sup>10</sup> Many of these codes are archaic to the extent that they do not now permit the use of tested and proved technological improvements. Requirements are often excessive (thus unduly adding to housing costs) and are frequently stated in terms of kinds and dimensions of materials rather than in terms of performance standards. Uniformity is lacking so the prefabricator is uncertain as to

<sup>10</sup> Straus, *op. cit.*, p. 67.



what kind of reception he will receive in each geographic area in which he tries to market his product. Many codes apparently fail to recognize new methods and materials. The net result? It is estimated that prefabricators may have trouble in marketing their product in two-thirds of all American cities with populations exceeding 50,000.<sup>11</sup> Conventional builders obviously can vary their product to meet such diverse and conflicting codes; the prefabricator, however, sacrifices some of the advantages of standardization in attempting to do so.

Fortunately, some legislators and public officials are slowly coming to realize the social costs involved in maintaining outdated and unreasonable codes; they are becoming aware that modernization of building codes is a regional—as opposed to local—problem. However, the pressures of groups interested in the *status quo* and the concomitant elimination of competition from prefabricators make progress in this area arduous and slow.<sup>12</sup>

### Inadequate Marketing Outlets

Another current problem elusive of solution is that of securing reliable and efficient marketing outlets for prefabricated houses. It is extremely difficult to bring together "quantity production

**Table 4. Marketing Outlets for Prefabricated Houses**

Outlet	Frequency of use <sup>a</sup>
Non-franchised dealers.....	29
Project builders.....	29
Franchised dealers.....	22
Direct to consumers.....	18
Real estate men.....	12
Sales to government.....	6
Building materials dealers.....	2
Others <sup>b</sup> .....	5

<sup>a</sup> The sum of these figures exceeds the number of respondents because most prefabricators employ more than one marketing outlet.

<sup>b</sup> Includes sales to industrial buyers, exports, and so on.

with its resulting economies, and a waiting public, with money in hand and with land bought and prepared with sewage, water, electricity and gas connections."<sup>13</sup> Prefabricators as a group employ a variety of outlets (see Table 4), but circumstances appropriate to individual producers tend to reduce the number of relevant alternatives to the extent that the average prefabricator employs about 2.5 different types of marketing outlets. Twenty-one percent of the surveyed firms rely on only one type of marketing outlet; 26 percent on two; 32 percent on three; 19 percent on four, and 2 percent on five. Marketing through franchised or nonfranchised dealers is clearly the most popular means of distributing prefabricated houses.<sup>14</sup>

<sup>11</sup> "Where is Prefabrication?" *Fortune*, Vol. 33 (April, 1946), p. 238.

<sup>12</sup> The Bureau of Labor Statistics (*Construction* [Washington: Government Printing Office], August, 1950, p. 10) cites "A slow but nevertheless definite trend . . . away from one-community codes to regional codes and from specification codes, which prescribe the kind and quality of material, to performance codes, which allow any material and quantity that will meet such requirements as weight bearing."

<sup>13</sup> Dorothy Rosenman, *A Million Homes a Year* (New York: Harcourt, Brace and Company, 1945), p. 59.

<sup>14</sup> In 1951 an estimated 2,000 dealers-erectors of prefabricated houses existed, ranging from very small dealers to large project builders. See Burnham Kelly, *The Prefabrication of Houses* (New York: Technology Press and John Wiley and Sons, 1951), p. 87.

**Table 5. Groups Responsible for Site Preparation, Erection, and Utility Attachment for Prefabricated Houses**

Group or agent	Frequency of use <sup>a</sup>
Company dealer or agent.....	31
Consumer.....	16
Company crews.....	11
Subcontractors.....	10

<sup>a</sup> The sum of these figures exceeds the number of respondents because some prefabricators use more than one agent.

The marketing of prefabricated houses is inextricably bound up with the preparation of the housing site, erection of the house, and the attachment of utilities. As Table 5 indicates, company dealers or company crews commonly assume responsibility for these functions but a considerable number of manufacturers still let the consumer or subcontractors shoulder this responsibility. To the extent that these functions are assigned to groups and agencies apart from the manufacturer a portion of the potential advantages of prefabrication and a strong selling point are lost. Any division of responsibility with respect to completion of the house is undesirable from the consumer's point of view. However, this is not to deny many advantages entailed in the use of dealers as middlemen.

Specific marketing problems are manifold. Most ultimately stem from prefabricators' preoccupation with production problems and materials procurement during the postwar housing boom. This preoccupation caused the majority of prefabricators to overlook

the problems of marketing; thoughtful planning of an over-all marketing program and specific marketing policies is all too frequently conspicuous by its absence. Thus most dealer-manufacturer relationships suffer from a decided lack of maturity.<sup>15</sup> The important point is this: Mass marketing is an obvious prerequisite to mass production. The solution of marketing problems is a necessary condition to future industry growth.

### Public Skepticism and Ignorance

Another major problem faced by prefabricators — that of public ignorance, indifference, and skepticism concerning prefabricated housing — has arisen from several sources. The most notable are the lack of attention given to quality by opportunists who manufactured prefabricated homes only when demand was greatest at the close of World War II; public confusion of permanent structures with temporary wartime prefabricated housing units; and the fact that overzealous manufacturers have sometimes sacrificed quality and design for quantity and have employed relatively untried and untested materials and techniques in their anxiety to attain large-scale operations or to find the key to low-cost housing.

Analyses of the market for prefabri-

<sup>15</sup> The median age of dealerships in 1952 was only two years. See Housing and Home Finance Agency, *Practices and Precepts of Marketing Prefabricated Houses* (Washington: Government Printing Office, November, 1952), pp. 6-7, 33-44. (This source is cited hereafter as *Precepts*.)

cated houses<sup>16</sup> have revealed some significant generalizations. (a) A surprisingly large number of people know little or nothing about prefabricated housing, brand knowledge in particular being very meager. (b) In general, people who know little or nothing about prefabricated houses tend to be unfavorably disposed toward them, an attitude not uncommon in the case of relatively new and unfamiliar products. (c) People tend to be better acquainted with the disadvantages than with the advantages of prefabricated houses. Low-income groups in particular, i.e., that untouched part of the housing market which prefabrication hopes to reach, display a marked unawareness of the advantages of prefabricated housing. (d) Industry advertising is apparently overselling the product with the result that those potential buyers who actually investigate the product tend to be disappointed. As one study concludes, "Over one-third of the consumers who had seen prefabs walked away with an unfavorable impression! . . . Another 50 percent . . . were unimpressed either way."<sup>17</sup>

### Poor Designs and Construction

Many of the pioneers of prefabrication found through bitter experience that consumers are relatively conservative in their tastes for housing. Ex-

tremely modern and unconventional designs — particularly those embodying new and unfamiliar material — encountered consumer apathy, as did completely standardized houses. Although the consuming public has been generally convinced that standardization in design is desirable — or at least acceptable — individuality is still a formidable force in the field of housing. Rigidly standardized houses are often difficult to market even if they possess superior design and construction. In short, the consumer is interested in "good construction" which to him implies conservatism and individuality in design achieved through the use of tried-and-true materials and techniques.

To what extent have prefabricators adjusted to the whims and desires of consumers? About 58 percent of the prefabricators surveyed are able to produce homes of both modern ("contemporary") design and conservative ("traditional") design. Twenty-seven percent make only houses of traditional design and the remaining 15 percent produce only houses of modern design. Similar adjustment to consumer preferences is implicit in the choice of materials. All 47 manufacturers polled use wood as the basic construction material with the exception of one who employs both wood and steel.

Furthermore, prefabricators have made considerable effort to avoid over-standardization. This is reflected most clearly in the number of basic models<sup>18</sup> which they produce. Table 6 indicates the number of basic models made by 39 prefabricators. The median figure is 20

<sup>16</sup> See Robert Ferber and Hugh G. Wales, "The Market for Prefabricated Houses," *Journal of Marketing*, Vol. 16 (July, 1951), pp. 18-28; Ferber and Wales, "How Effective is Prefab Advertising?" *Current Economic Comment*, Vol. 13 (May, 1951), pp. 42-44; and "Where is Prefabrication?" *loc. cit.*, p. 275.

<sup>17</sup> Ferber and Wales, "How Effective is Prefab Advertising?" *loc. cit.*, p. 43.

<sup>18</sup> Defined simply as the number of basic floor plans available to buyers.



Table 6. Number of Basic Models Produced by 39 Prefabricators

Number of models	Number of firms
Over 100.....	1
80-99.....	0
60-79.....	2
40-59.....	2
20-39.....	14
19 or fewer.....	20

basic models per firm. Three firms excluded from Table 6 do custom work and hence can produce an infinite number of designs. Several firms included in Table 6 expressed a willingness to do custom work in addition to making their standard models.

The quality of prefabricated construction does not have a nontechnical quantitative dimension. Nevertheless, the fact that 57 percent of the surveyed producers cited the general problem of poor designs and inferior construction as being of "very great" or "some" significance implies that high-quality production has not been achieved by some existing firms. On the other hand, 43 of the 47 prefabricators surveyed have FHA financing available on all their houses. This indicates that at least minimum quality standards are being met.<sup>19</sup>

<sup>19</sup> Three of the remaining firms indicated that FHA financing was available only on some models; one firm did not answer the question. Prefabricated houses in qualifying for FHA mortgage insurance must pass tests of a more rigid nature than those required of conventional builders. See Congress of the United States, Report of a Subcommittee on Housing, *High Cost of Housing* (Washington: Government Printing Office, 1948), p. 157. (This source is cited hereafter as *High Cost*.)

## Production Shortcomings

### *Failure to Realize Mass Production and Related Economies*

The great majority of prefabricators have apparently failed to realize fully, if at all, economies of scale and other cost advantages associated with prefabrication.<sup>20</sup> Concomitantly, it is doubtful that they have been able to make significant incursions upon prices. The net result is that most prefabricators have not been able to compete very successfully with the small conventional builder, not to mention the large project builder who is in a position to take advantage of many of the technological improvements used by prefabricators.

This study does not permit a detailed analysis of the various economic and technical aspects of achieving mass production in house construction. Nevertheless, a brief discussion of the current scale of production in the industry will be presented. The related issues of (a) the extent to which the prefabrication industry has moved housing construction from the site to the factory, (b) economies of time stemming from rapid construction, (c) seasonality and

<sup>20</sup> There is no consensus as to how large a prefabricator must be to realize the economies of mass production. This obviously depends upon many variables, e.g., the size and quality of the house, the type of prefabrication employed, the degree of product standardization, and so on. One writer, employing government estimates, suggests an output of 25 houses per day as essential to the realization of significant economies. See Gordon H. Cole, "The Truth About Prefabrication," *Science Digest*, Vol. 18 (November, 1945), p. 9. By this criterion only one of the respondents in this survey is realizing such economies!

**Table 7. Estimated 1955 Production of 39 Prefabricators**

Number of houses	Number of firms
3,000 or more.....	1 <sup>a</sup>
2,000-2,999.....	6
1,500-1,999.....	1
1,000-1,499.....	10
750- 999.....	2
500- 749.....	6
250- 499.....	9
249 or fewer.....	4

<sup>a</sup> This particular firm anticipated production of 25,000 houses in 1955. The total of the estimates of these 39 firms was 59,265 houses.

the use of inventories, and (d) labor costs in prefabrication plants will give some general indication of the over-all extent to which potential cost advantages associated with prefabrication are being realized.

#### *Small-Scale Production*

The survey yielded results which support the contention that small-scale producers are predominant in the industry. Manufacturers were asked to estimate their 1955 production. Table 7, which summarizes the responses, indicates that slightly over one-half of the firms expected to produce fewer than 1,000 houses in 1955. Very few firms would produce more than 1,500 houses in 1955, the median figure for all respondents being 800. Smallness is

**Table 8. Number of Factory Workers Employed by 41 Prefabricators**

Number of workers	Number of firms
500 or more.....	1
300-499.....	5
200-299.....	5
100-199.....	9
99 or fewer.....	21

**Table 9. Degree of Factory Fabrication Achieved by 44 Prefabricators**

Percentage of factory fabrication	Number of firms
90 or more.....	6
80-89.....	8
70-79.....	7
60-69.....	8
50-59.....	4
40-49.....	4
30-39.....	7
29 or less.....	0

equally evident in the sizes of the factory labor forces employed by prefabricators. As Table 8 indicates, about one-half of all responding producers employ fewer than 100 factory workers, the median figure being 85.

#### *Degree of Factory Fabrication*

Many of the economies and advantages associated with prefabrication presuppose the transferring of work from the housing site to the factory. To what extent have prefabricators been successful in doing this? Table 9 reflects a considerable degree of success on this point, although the extent of such a transfer varies widely among firms. The extent to which savings in manpower and materials and productivity increases result from this transfer is debatable.<sup>21</sup>

#### *Site Construction Time*

One of the areas in which prefabrication purports to achieve cost reduc-

<sup>21</sup> See Alexander C. Findlay, "Construction of Prefabricated and Conventional War Housing Projects," *Monthly Labor Review*, Vol. 63 (November, 1946), pp. 721-32. It must also be emphasized that the prefabricator's package, i.e., the shell of the house, constitutes only about 40 percent of the total cost of a completed house. See *High Cost*, pp. 144-45.

**Table 10. Time Lapse from Receipt of Order to Completion of House for Occupancy for 44 Prefabricators**

Time lapse (in days)	Number of firms
60 or more.....	11
45-59.....	9
30-44.....	14
15-29.....	6
14 or less.....	4

tions is in the time reduction involved in the actual erection of a house. To what extent has this been realized? Table 10 suggests that the economies of time stemming from rapid construction have been considerable, though not overly impressive. The median figure is 36 days, the arithmetic mean about 42 days. It is also significant, however, that even with quick site erection the final sale of a prefabricated house is often delayed by slowness in the completion of financing arrangements. Thus, "a median of six weeks usually elapses between the time of arrival of the house package at the site and the date of final settlement with the consumer."<sup>22</sup>

### Seasonal Irregularities and Inventories

Ideally, prefabrication holds the key to ameliorating seasonality in the production of residential housing. This can be achieved, it is argued, by producing for inventory during the winter months when conventional construction is slowed. This enhanced seasonal regularity implies concomitant cost economies.

The present survey reveals, however,

that production for inventory is the exception rather than the rule in the prefabrication industry, i.e., sales and production are still largely a matter of consumer initiative. Only 9 of the 47 firms surveyed maintained inventories of "finished" houses, i.e., completed panels or sections. With one exception all of these 9 firms kept inventories of less than 20 houses. Therefore, one would expect considerable seasonality to persist in the industry. Although only 12 of the surveyed firms were able to supply accurate seasonal data, these data are revealing. Total production figures for these 12 firms taken as a group for each month in 1954 are summarized in Table 11. Column (2) shows total units produced for each month and column (3) expresses monthly production of prefabricated structures as a percentage of total output of prefabricated houses for 1954 by the 12 respondents. Column (4) indicates the seasonality of the residential construction industry as a whole, i.e., the percentage of total housing construction that occurred in each month during 1954. Comparison of columns (3) and (4) suggests that the residential construction industry as a whole may have *greater* seasonal regularity than does prefabrication! This in turn implies that a considerable amount of seasonality exists on the demand side of the housing market and/or that site erection of prefabricated houses cannot escape the seasonal influence. The location of the majority of prefabricators in northern states close to areas of greatest concentration of population also may be a contributing factor.

<sup>22</sup> *Precepts*, p. 16.



Table 11. Seasonality of Production of 12 Prefabricators as Compared with Total Housing Production

Month (1)	Production of 12 prefabricators (2)	Percentage of annual prefab production (3)	Percentage of all house produc- tion in 1954 <sup>a</sup> (4)
January.....	1,206	3.9	5.4
February.....	1,185	3.8	6.2
March.....	1,958	6.3	7.8
April.....	2,270	7.3	8.8
May.....	2,679	8.6	8.9
June.....	3,206	10.3	9.5
July.....	3,593	11.5	9.5
August.....	3,677	11.8	9.4
September.....	3,310	10.6	9.5
October.....	2,976	9.6	9.1
November.....	2,826	9.1	8.5
December.....	2,233	7.2	7.4
Total.....	31,119	100.0	100.0

<sup>a</sup> Calculated from Housing and Home Finance Agency, *Housing Statistics*, (Washington: Government Printing Office, July, 1955), p. 2. These data include only permanent nonfarm dwelling units for 1954.

### Labor Costs

Prefabricators have apparently achieved some success in reducing hourly labor costs. Table 12 summarizes the average hourly wage rates paid to factory workers of 36 prefabricators. The median wage rate is \$1.75 and the arithmetic mean \$1.79, both of which compare favorably from the producer's standpoint with hourly wage rates of building construction workers in gen-

eral.<sup>23</sup> This, however, implies a significant and as yet unanswerable question: Does the apparent wage cost advantage of prefabrication constitute a permanent advantage stemming from the substitution of unskilled for skilled labor and the enhancement of worker security or merely a transitory labor "subsidy" to an embryonic industry which will disappear wholly or in part when and if the industry matures? Furthermore, it must be noted that direct factory labor costs average only about 7½ percent of the total house cost (excluding land) whereas erection

Table 12. Average Hourly Wage Rates of Factory Labor of 36 Prefabricators

Average hourly wage rate	Number of firms
\$2.50 or more.....	3
2.25-2.49.....	1
2.00-2.24.....	4
1.75-1.99.....	11
1.50-1.74.....	9
1.25-1.49.....	7
1.24 or less.....	1

<sup>23</sup> Statistics of the Housing and Home Finance Agency, *Housing Statistics*, July, 1955, p. 24, show the average hourly earnings of workers employed in building construction to be \$2.60 for 1954. Hourly wages for organized labor in the building trades averaged \$2.80 in 1954. See "Union Wage Scales in the Building Trades, 1954," *Monthly Labor Review*, Vol. 78 (March, 1955), p. 319.

labor costs average in excess of 14 per cent.<sup>24</sup> Hence, the over-all significance of relatively low wage costs for factory labor must not be overemphasized.

## Prices

Have prefabricators realized sufficient economies of scale and factory production to permit them to make significant incursions upon the sales of conventional producers by offering their product at lower prices? Price data yielded by the survey are shown in Table 13.<sup>25</sup> The median of \$11,000 and arithmetic mean of \$10,800 may well compare favorably, *ceteris paribus*, with conventional construction. But for many consumers, the assumption of *ceteris paribus* is very debatable.<sup>26</sup>

It is thought that the demand for prefabricated housing is substantial only at relatively low price levels, i.e., that prefabricated houses apparently have a high price elasticity of demand. Moreover, the majority of the buyers of such houses have been young fami-

Table 13. Prices of Most Popular<sup>a</sup> Models of 41 Prefabricators

Price	Number of firms
\$16,000 or more.....	3
13,000-15,999.....	5
10,000-12,999.....	18
7,000- 9,999.....	10
6,999 or less.....	5

<sup>a</sup> Defined simply as "best selling."

lies in the lower-middle income groups.<sup>27</sup> Are prefabricators in a position to service the vast housing market of the low and middle income groups? By applying the somewhat timeworn rule of thumb that a family should not spend an amount more than twice its annual income on a house, it can be concluded that the majority of prefabricators are not producing for lower income groups but are generally competing with conventional builders for that part of the housing market largely composed of middle and upper income groups.<sup>28</sup>

<sup>24</sup> *High Cost*, pp. 150-51.

<sup>25</sup> Price data for prefabricated houses must be handled and interpreted with care. This is true for several reasons. First prefabricated houses obviously differ markedly with respect to size, quality, desirability of location, and so forth. Second, there exists no standard practice in quoting prices, i.e., some prices are the buyer's "turn key" prices for completed house and lot; other prices may exclude the lot; some houses are sold short of completion (some work being left to the buyer). To complicate matters, a few producers who do not deal directly with consumers are able only to quote their price for the house "package" which therefore is exclusive of lot, site preparation, the attachment of utilities, site construction costs, and so on. The price data in Table 13 are exclusive of package prices; most, but not all, of the included prices include land and improvements, i.e., are "turn key" prices.

<sup>26</sup> See Ferber and Wales, "The Market for Prefabricated Houses," *loc. cit.*, pp. 18-28.

<sup>27</sup> *Ibid.*, p. 24; *Precepts*, pp. 8-9.

<sup>28</sup> If the median price of \$11,000 in conjunction with the stated rule of thumb are compared with current income distribution figures, it appears that well over 60 percent of all family units are unable to buy at the median price. See "1955 Survey of Consumer Finances," *Federal Reserve Bulletin*, Vol. 41 (June, 1955), p. 617. It is not at all uncommon for the prices of more expensive models to lie in the \$25,000-\$50,000 price range. It is also of interest to note that in 1951 the president of the Prefabricated Home Manufacturers' Institute declared that the mass market for prefabricated houses entails a product price no more than \$10,000 including land cost (*New York Times*, April 29, 1951, Section 8, p. 6). See, however, William K. Wittausch, "Marketing Prefabricated Houses," *Harvard Business Review*, Vol. 26 (November, 1948), pp. 696-7.

### High Transportation Costs

Ironically, transportation costs tend to vary directly with the degree of factory fabrication that is obtained, i.e., each cost reduction realized by transferring work from the site to the factory is offset—to some degree—by increased transportation costs. *Ceteris paribus*, transportation costs imply a competitive advantage for the conventional producer. High transportation costs and related marketing problems have forced most prefabricators to be content with a local or regional market. Table 14 summarizes the radii of distribution for the surveyed manufacturers. The median figure is 500 miles and the arithmetic mean approximately 492 miles. Of possibly greater significance is the fact that about 42 percent of the respondents are unable to service markets in excess of 350 miles from their plants.

Although multi-plant operation is a potential alleviating factor, this has not been achieved in practice. Thirty-six firms surveyed are one-plant firms, three have two plants, and only seven have three plants. In short, prefabrication embraces the tacit assumption that diminished production costs will more than offset increased distribution costs.

Table 14. Radius of Product Distribution of 45 Prefabricators

Radius (in miles)	Number of firms
1,000 or more. . . . .	3
750-999. . . . .	3
500-749. . . . .	18
250-499. . . . .	13
249 or less. . . . .	8

It is doubtful that many producers have approached this status.

### Insufficient Capital

Table 3 shows that where the problem of insufficient capital is present, it tends to assume an acute form. Although the larger, well-established firms apparently have sufficient financial strength, a substantial number of companies are comparatively new and small in size (see Tables 2, 7, and 8) and are witnessing rather severe difficulties in obtaining sufficient money capital.<sup>29</sup> Financial difficulties are of a multi-dimensional nature.

The prefabricator, generally speaking, needs more capital funds than the conventional builder for several reasons: (a) Greater capital investment is required for plant and equipment; (b) greater materials inventories plus appropriate storage facilities are presumed; (c) considerable handling and transportation costs are incurred in shipping prefabricated houses; and (d) if the prefabricator is desirous of saving recurrent shipping expenses, a large capital outlay for trucks and trailers is presumed. In some cases transportation equipment must be constructed especially for the product to facilitate safe shipment. Assuming the money capital for such outlays is obtained externally, a part or all of the potential interest savings associated with prefabrication may be sacrificed.

In addition, "interim financing," i.e., financing for the period between manu-

<sup>29</sup> See Austin Drewry, "Internal and External Problems of the Manufactured Homes Industry," *Prefabricated Homes*, July-August, 1947, pp. 26-27.



facture of the house and the arrangement of permanent financing by the consumer, often poses serious problems for both manufacturer and dealer. It is not surprising to find one of the leading manufacturers estimating in 1949 that at least \$100,000 in capital is needed to set up a prefabrication plant and begin operations.<sup>30</sup>

In short, other things being equal, prefabricators are at a decided handicap in competition with conventional builders so far as the need for capital is concerned. In addition, skepticism toward prefabrication on the part of consumers apparently carries over to the investment field with the result that, in many cases, prefabrication firms are not generally regarded as safe investments. The high mortality rate of firms — particularly in the postwar era — has strengthened this opinion. Local dealers are experiencing similar difficulties in obtaining funds for the purchase of the house package from the producer, for land acquisition, for site preparation and erection expenses, and in acquiring suitable mortgage outlets.

### Opposition of Vested Interests

Problems of more or less secondary significance are those stemming from the opposition of such groups as real estate and financial interests, labor unions, and conventional builders.

As the survey shows (Table 4), in relatively few instances are real estate men employed as marketing outlets for prefabricated houses. Indeed, real estate and financial interests, apprehensive as to the effect of potentially

lower-priced prefabricated houses on oftentimes overvalued and overmortgaged conventional houses, are frequently reluctant to grant loans and other assistance to prefabricators or their dealers. The mortgage-lender, who has as his primary responsibility the safety of the funds of stockholders and other investors in his business, must be somewhat conservative in his dealings. Consequently, he is reluctant in many cases to assume the risks involved in prefabricated houses until he is fully satisfied as to the financial soundness of the manufacturer and the quality of the product. The significance of this situation can be seen when one realizes that approximately 95 percent of the prefabricator's financial business must flow through the mortgage lender.<sup>31</sup>

It is not surprising that some local craft unions, fearing that technological advance and the introduction of new materials in the production of prefabricated homes will cut down and eventually eliminate many of the jobs held by their members, have opposed in a variety of ways the development of the prefabrication industry. In some cases union workmen have simply refused to erect prefabricated houses, and in other cases, to connect plumbing, gas, or electrical utilities. In those cases where union crews do work on factory-fabricated houses, high charges are sometimes exacted for union permits to engage in such work. It should be noted that it is basically the local unions rather than the national leaders who are strongly opposed to factory-built houses. National leaders claim they are

<sup>30</sup> "Houses: Factory Finished," *Business Week*, November 26, 1949, p. 52.

<sup>31</sup> Drewry, *loc. cit.*, pp. 26-27.

not opposed to prefabrication so long as union labor is employed in the factories.

Of those manufacturers polled in the present study, 57 percent (21 firms) employed 100 percent AFL factory labor. More than 90 percent of the work force in three other firms belonged to AFL unions and in another about 70 percent belonged to AFL unions. Oddly enough, 95 percent of the labor force of one prefabricator belonged to the United Mine Workers. Three firms employed small numbers (10 percent or less of their labor force) of AFL workers. About 35 percent (13 firms) of the manufacturers use 100 percent nonunion labor in their plants.

Approximately 81 percent (38 firms) of the prefabricators surveyed do not employ site labor, i.e., their dealers or the buyer ordinarily assumes the responsibility for actual erection of the house, attachment of utilities, and so on. Of the 9 firms who do employ site labor, 5 employ 100 percent AFL, 2 employ between 35 percent and 50 percent AFL labor, and 2 use only nonunion labor. With respect to dealer practices, another study<sup>32</sup> has concluded that about 50 percent use union labor, local construction practice being the determining factor. Local plumbers and electricians provide the greatest opposition to prefabricated housing.

From these data it may be concluded that, generally speaking, prefabricators are, of their own volition or not, hiring union labor for the greater part of their factory operations. Enhanced product marketability may be a contributing

factor. However, it must be emphasized that the use of union factory labor does not guarantee an amiable reception by local craft unions.

In general, many conventional builders have an attitude toward prefabrication which is similar to that of local craft unions and real estate-financial groups and which is prompted by similar reasons. If the prefabrication industry should develop to a size sufficient to gain a larger relative share of the residential housing market, some conventional builders might be forced to curtail operations and/or to accept decreased profits as a result of this competition.<sup>33</sup> However, conventional builders are probably not in a position to do as much to retard the growth of prefabrication as are labor groups and financing agencies. Nevertheless, successful competition by conventional builders for scarce materials and pressure for the maintenance of unreasonable building codes is often effective and not uncommon.

### Other Problems

Three other problems, deemed to be of secondary significance by prefabricators, are, in order of importance, insufficient research on materials and methods, the absence of dimensional or modular coordination, and the lack of cooperation among prefabricators.

In a sense the first problem is a long-run counterpart of the previously

<sup>32</sup> *Precepts*, pp. 23-24.

<sup>33</sup> It is of interest to note that a good many dealers of prefabricated houses have been conventional builders or subcontractors in the past. See *Precepts*, p. 4; and Gordon J. Chapman, *Marketing of Prefabricated Houses*, Indiana University Business Study No. 35, February, 1953, pp. 12-13.

discussed problem of poor designs and inadequate construction. Most prefabricators, being relatively small-scale operators preoccupied with the pressing problems of a new industry, are unable to finance basic research projects with respect to building materials and methods. Consequently, in many cases prefabrication is little more than a transfer of work from the building site to the factory and is not the application of *new* materials and *new* techniques to the construction process. Indeed, government and privately endowed organizations have probably made as great a contribution as active firms have in the area of research and product development.

Closely related to the problem of insufficient research is the technical problem of achieving modular coordination, i.e., a system of dimensional coordination in housebuilding based upon a standardized unit of construction whereby construction occurs in terms of multiples of the standardized unit. However, this problem, along with that of achieving greater cooperation among producers in terms of exchanging technical and practical business information, is considered by producers to be of rather remote significance (see Table 3).

### Prospects for the Future

Any summary of the current status of the prefabricated housing industry must be a crazy quilt of formidable problems intermixed with signs of progress and growth. Without dwelling on previously mentioned specific conclusions, let us turn to some broad and somewhat

speculative comments concerning the future.

(1) The industry is faced with a myriad of interrelated problems of both an external and internal nature which prohibit most firms from achieving the advantages associated with prefabrication and mass production. These problems are of both a short- and long-run nature to the extent that potential solutions may be mutually exclusive or contradictory, e.g., the immediate problem of gaining public acceptance may work against a satisfactory solution to the long-run problem of research on materials and methods and the production of a relatively large number of basic designs appeals to consumer individualism in the demand for housing but may work against achieving economies of standardization. In turn, this implies that only as the short-run problems of consumer acceptance, financing, obtaining adequate and stable marketing outlets, and reducing transportation costs are solved will the possibly more fundamental problems associated with the rationalism of housebuilding in terms of mass production receive adequate attention from producers. Current emphasis on the immediate and pressing problems of a going concern has seemingly pushed the long-run problems of modular coordination and basic research on materials and methods into a position of secondary importance. This potential underestimation of what may ultimately prove to be the truly fundamental obstacles to the attainment of low-cost housing may put definite limitations upon future successes of prefabrication. Fur-



thermore, the over-all consequences of these industry problems in the aggregate may be more than the simple sum of the individual problems.

(2) There is reason to believe that many firms have failed to make a clear-cut break with conventional construction in terms of scale of operations, techniques and materials, and industrial organization. As a result, they are subject to a host of problems peculiar to the prefabricator without concomitantly realizing, to any significant degree, the associated economies. Modernization of the housebuilding industry demands an even more comprehensive approach than that embodied in either the theory or current practice of prefabrication. (See footnote 21.) Economies in financing, site preparation and construction, and land improvement still lie largely outside the realm of prefabrication as it is now conceived. Furthermore, simplification in the organization of the industry has fallen considerably short of earlier anticipations of the proponents of prefabrication.

(3) There appears to be a definite need for further growth in terms of a smaller number of large firms. It seems economically desirable to move further away from competition in the traditional sense in favor of concentration of productive potential in the hands of a smaller number of strong firms. This not only appears economically desirable from the viewpoint of achieving production economies but also from the standpoint of obtaining materials and financing on more favorable terms than is currently the case. If countervailing

power<sup>34</sup> can be a positive economic force in modern capitalism, prefabrication provides an ideal opportunity for that force to display its merits. As one prefabricator simply put it: "Mergers as in the automobile industry are the thing that will make the industry."

(4) A rather ironic possibility must be considered at this juncture. Is it not possible in view of the relatively rapid technological advance in conventional construction in the postwar era that the long-run impact of prefabrication may be not in terms of its own growth and successes but rather in the stimulus it provides to over-all progress in the residential construction industry in general? Might prefabricators arise some gloomy morning to find that they have won their point but lost their cause? Any definite answer to these queries awaits further developments in conventional housing construction.

(5) One final observation seems pertinent: The prefabrication industry is young, fairly vigorous, and shows signs of growth despite formidable obstacles. Furthermore, most prefabricators seem completely convinced that they are on the path leading most directly to the vast housing market of the lower-income groups. The history of American industry demonstrates that

<sup>34</sup> With respect to the conventional construction industry John K. Galbraith, in *American Capitalism* (Boston: Houghton Mifflin Company, 1952), pp. 130-31, argues that "... it is the notion of countervailing power, not of competition, which points the way to progress in the housing industry. What is needed is fewer firms of far greater scale with resulting capacity to bring power to bear upon unions and suppliers." This observation seems entirely applicable to prefabrication.

this happy combination of hardheadedness and achievement in the face of a web of perplexing problems has often paid large dividends. There is hope that prefabrication may blossom forth into maturity in the not-too-distant future. Perseverance, a gradual decline in the significance of both external and

internal problems, and a more than occasional helping hand from government may eventually result in a profitable formula for the mass production of factory-built houses. Yet past experience works against the acceptance of an overly optimistic "just-around-the-corner" attitude.





# Trends in the Use of Electric Power

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*University of Illinois*

FEW BUSINESS INDICATORS are as representative of the growth and fluctuation in our economy as electric power consumption. Since nearly all activity is dependent at some stage on the availability of electric power, changes in activity are generally reflected in electric power sales. At the same time, since many technological advances and improvements in the standard of living are geared to increased use of electric power, a strong upward trend characterizes the change in electric power consumption over time.

It is the purpose of this article to examine the growth and seasonal pattern of sales of electric power in Illinois by type of user during the postwar years, 1948-55. By beginning with 1948, we eliminate the war-induced reaction of the immediate postwar years. By restricting the study to Illinois and carrying out the analysis by type of user, we are able to obtain results for fairly homogeneous segments of a small part of the national economy. The state of Illinois is, however, also known to be highly representative of the nation as a whole in terms of such economic characteristics as distribution of population and of industry, so that the results of this study may well be indicative of the situation in the industry generally.

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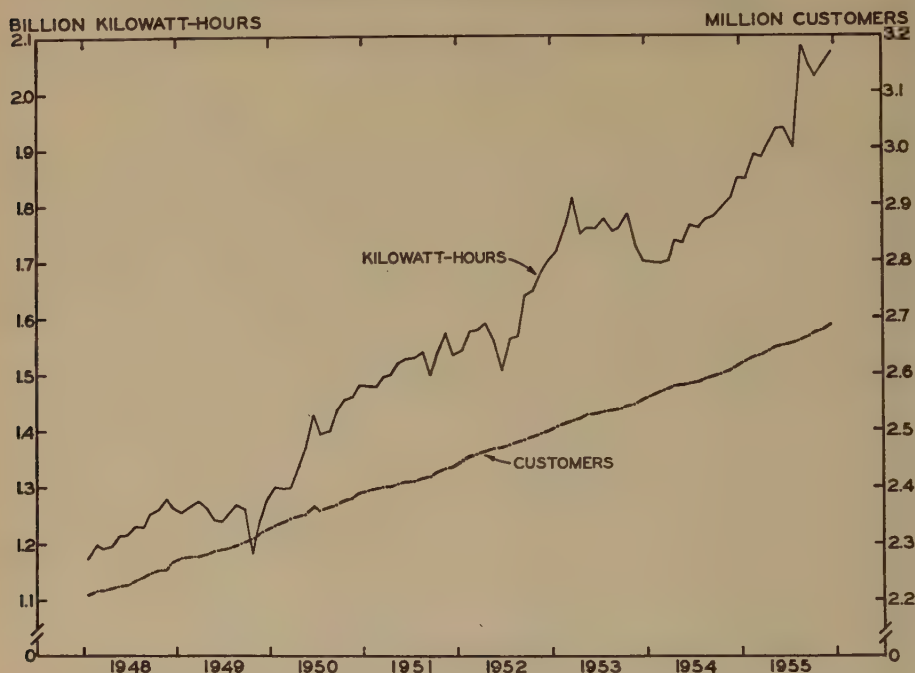
## Growth

Sales of electric power have exhibited a remarkably stable growth pattern during the postwar period. This is apparent from Chart 1, which portrays the increase in sales in Illinois, after removal of seasonal influences, and the corresponding increase in number of customers between 1948 and 1955.<sup>1</sup> While about 60,000 new customers have been added every year, a 2.5 percent increase, sales of kilowatt-hours have advanced at the rate of 7 percent per year. Thus, in addition to the growing number of customers, the use of electricity by each customer has increased as well.

It can be shown that the great bulk of the increase in electric power sales is accounted for by the growth in the population of the state and by the ex-

<sup>1</sup> Companies included are Commonwealth Edison Company, Central Illinois Electric and Gas Company, Central Illinois Light Company, Central Illinois Public Service Company, Illinois Power Company, Iowa-Illinois Gas and Electric Company, Produce Terminal Corporation, and Union Electric Company of Missouri. These companies accounted for almost all of the kilowatt-hour sales in Illinois through 1952, and they currently account for more than 75 percent of the sales. Omitted from the data are the sales of Electric Energy, Incorporated, a company formed to supply power to the United States government for use in research and development of atomic energy. The operations of this company, launched in 1953, are influenced primarily by atomic energy development needs rather than by general economic trends.

Chart 1. Electric Power Sales and Customers, 1948-55



Source: Original data obtained from Illinois Commerce Commission; seasonal adjustments computed by authors.

pansion in its income. This is accomplished by measuring through multiple correlation analysis the extent to which the growth in sales is explained by changes in population and in the aggregate income of the state's population. The equation obtained, based on the years 1948-55, is:

$$\text{Total sales} = -35,736 + .82 (\text{Illinois state income payments}) + 4.46 (\text{population})$$

where sales are in millions of kilowatt-hours, income payments are in millions of dollars, and population is in thousands of persons.

What this equation says is that an increase of \$1 million in total income payments in the state in any particular year was accompanied by an increase

in electric power sales in that year of 820,000 kilowatt-hours, and an increase of 1,000 in population was accompanied by an average rise of 4.5 million kilowatt-hours in electric power sales. The two variables, income and population, together accounted for 98.6 percent of the variation in electric power sales during this period. Income, however, was the more important of the two, accounting for two-thirds of the fluctuations in sales, which is a significant finding for analytical and prediction purposes.

#### Trends by Type of Customer

The over-all growth trend of electric power sales in Illinois obscures significant differences among various types of customers. The main types and the im-

**Table 1. Distribution of Kilowatt-Hour Sales and Number of Customers, 1955**

Type of user	Percent of total	
	Kilowatt-hour sales	Customers
Industrial.....	50.1	4.3
Residential.....	22.4	82.8
Commercial.....	21.3	11.5
Rural.....	2.9	0.9
Other <sup>a</sup> .....	3.4	0.5
Total.....	100.0	100.0

<sup>a</sup> Includes sales to public authorities and to railways.

Source: Illinois Commerce Commission.

importance of each in 1955 are illustrated in Table 1.

Industrial customers, comprising less than 5 percent of all customers, accounted for more than half of all kilowatt-hour sales. This is not surprising considering the huge amounts of electricity consumed by industrial plants relative to other types of customers. Reflecting this same phenomenon at the other extreme is the fact that 83 percent of all customers, the residential dwellers, purchased only 22 percent of the electricity sold in Illinois in 1955.

Trends in the sale of electricity to each of the five main types of users shown in Table 1 are depicted on the logarithmic scale of Chart 2, after adjustment for seasonal variations.<sup>2</sup>

For all users except rural, a linear trend is evident—meaning that the sale of electricity changed by a constant

percentage throughout this period. The movement was upward for the three main types of users—industrial, commercial, and residential—and downward for the “other” group of users. The decline of the latter reflects the switch from street railways to buses and the discontinuance of some railroad passenger service. In the case of rural sales of electricity, the trend has clearly been upward but the *rate* of increase appears to be a declining one. Rural electrification has continued to expand in the state; the total number of customers has grown by one-fourth between 1948 and 1955. The amount of power consumed has more than doubled in the same period, as new home appliances and new farm machinery have been added to farms in increasing amounts.

Industrial sales are the only segment to exhibit significant cyclical fluctuations, and they account for the cyclical pattern evident in total sales in Chart 1. In both 1949 and 1954 industrial power use was substantially below the long-term trend line, as indicated in Chart 2. Both of these were years of mild recession in general industrial activity.

Residential sales have climbed faster than sales to most other users and by 1954, it will be noted, exceeded sales to commercial users in the state for the first time. A multitude of new appliances, rapidly becoming standard equipment in the home, account for most of this growth. In addition, population growth and undoubling of families as the supply of housing was expanded led to a 20 percent gain in number of customers since 1947. On the other hand, the increase in commercial users

<sup>2</sup> The trend equations are:

$$\text{Industrial: } Y = 556.8 (1.006)^T$$

$$\text{Residential: } Y = 206.3 (1.008)^T$$

$$\text{Commercial: } Y = 249.7 (1.005)^T$$

$$\text{Rural: } Y = 160.8 - 134.9 (.9973)^T$$

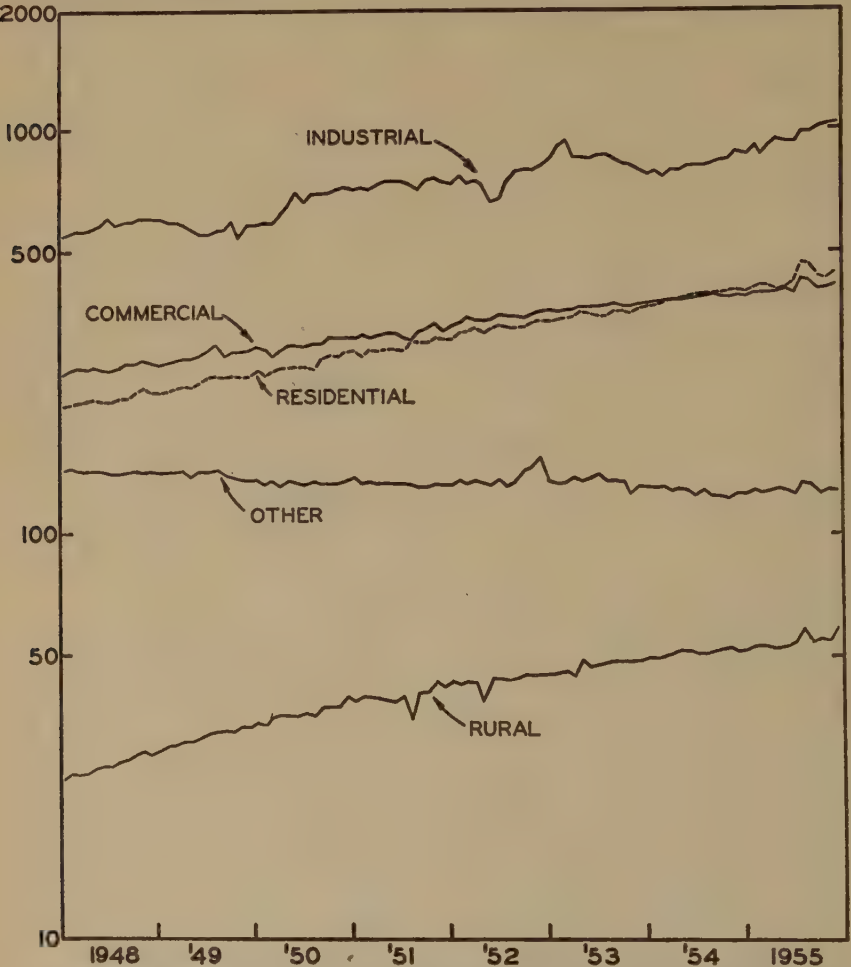
$$\text{Other: } Y = 142.2 (.9987)^T$$

In all cases, the origin is December, 1947, and the unit of  $T$  is one month.



Chart 2. Electric Power Sales, by Type of Customer, 1948-55

MILLION KILOWATT-HOURS



Sources: Original data obtained from Illinois Commerce Commission, Commonwealth Edison Company, and Central Illinois Public Service Company; seasonal adjustments computed by authors.

was only 10 percent, as the number of retail stores in the state declined during this period.

A comparison of the various (compound) annual rates of increase in sales to the different types of users during 1948-55 is presented in the following tabulation:

Type of user	Annual rate of increase
Industrial.....	7.3%
Commercial.....	6.5
Residential.....	10.1
Rural .....	10.6
Other .....	-1.5
Total .....	6.9

**Table 2. Proportion of Change in Electric Power Sales Due to Larger Number of Customers and to Increased Use per Customer, 1948-55<sup>a</sup>**

Type of user	Proportion of increase due to rise in		
	Number of customers	Use per customer	Total
Industrial.....	10%	90%	100%
Commercial.....	23	77	100
Residential.....	24	76	100
Rural.....	16	84	100
Other <sup>b</sup> .....	46	-146	100

<sup>a</sup> The proportion of change due to increase in the number of customers was measured by the ratio of the percentage change in customers to the sum of the percentage change in customers and the percentage change in use per customer.

<sup>b</sup> Decrease.

As is evident from this tabulation and from Chart 2, sales to rural, industrial, and residential users have increased more than the total while those to "other" users have actually declined. That sales of electric power have increased most to rural users may well be somewhat of a surprise. As indicated by Table 2, the main factor accounting for this advance is the increased purchase of electricity by individual customers rather than any sharp rise in the number of customers served.

Table 2 also makes it clear that the increases in electric power sales to all types of users but "other" were due primarily to greater consumption of electricity by individual customers rather than to a substantially larger number of customers. Thus, in the case of industrial use, an increase in the number of customers accounted for only 10 percent of the increase in sales whereas heavier use by individual customers accounted for the other 90 percent. In the case of "other" users, the number of customers served rose by 4.2 percent whereas consumption per customer fell 13.4 percent between 1948

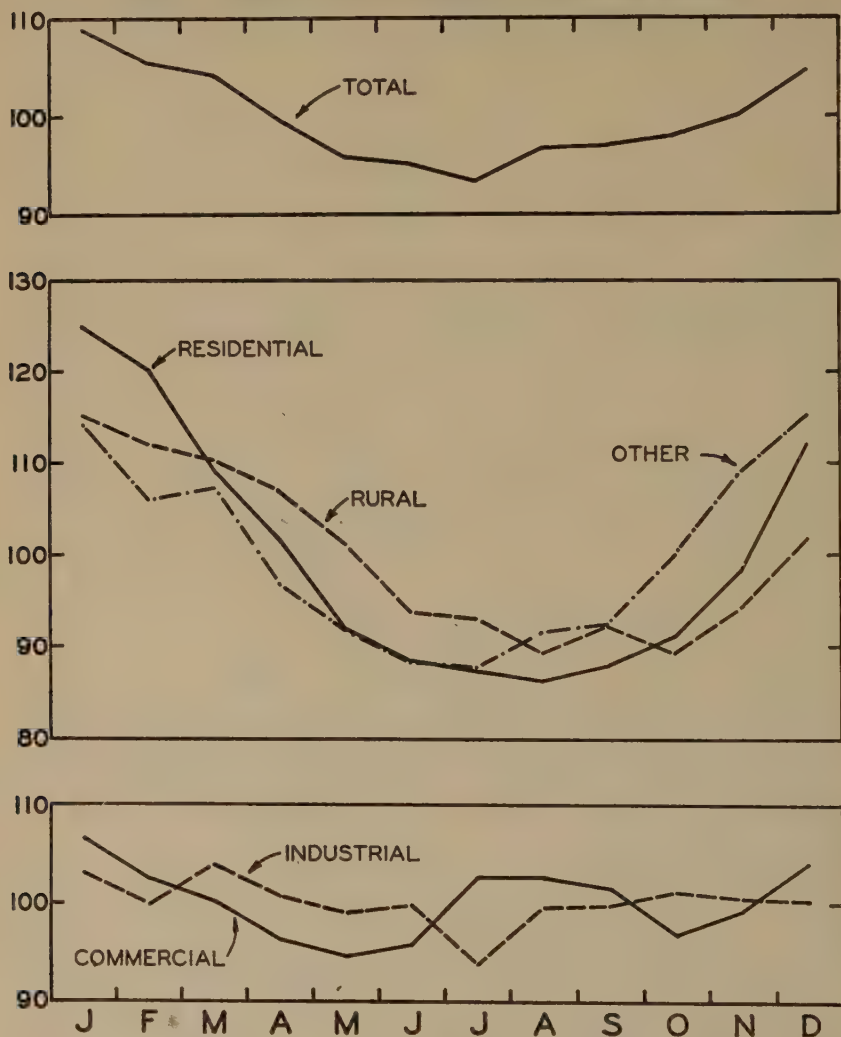
and 1955. The decline in use per customer may well be due to the effect of competition on the business of street railways, brought about by the gradual switch from electrified means of transportation to other forms (mainly buses).<sup>3</sup>

### Seasonal Patterns

Seasonal variation is a characteristic phenomenon of electric power sales (or production), partly because of the periodic fluctuations in business activity and partly because of the regular variations in climate and in amount of daylight throughout the year. The amplitude of such seasonal patterns in electric power sales to the different types of users is shown in Chart 3; the actual

<sup>3</sup> If the sales of Electric Energy, Incorporated, are included in "other" sales, a markedly different picture is presented. Sales of this company rose rapidly as the government atomic project got under way, expanding from only 118 million kilowatt-hours in April, 1953, the first month of use, to 791 million kilowatt-hours in December, 1955. Although this does not affect the slight down-trend of the years prior to 1953, it does result in a sharp rise in the trend since that date. The most rapid increase came in the first six months, with the growth rate tapering considerably in 1954 and 1955.

Chart 3. Seasonal Indexes of Electric Power Sales, 1948-55



Sources: Computed from data obtained from Illinois Commerce Commission, Commonwealth Edison Company, and Central Illinois Public Service Company.

data are shown in an appendix table.<sup>4</sup>

In a broad sense, two distinct sets of seasonal patterns are evident. For three types of users — residential, rural, and “other” — sales are highest in

December and January, decline more or less steadily to a low point in July or August, and rise thereafter. The seasonal variations are most pronounced for sales to these types of users, as is borne out by the indexes of relative amplitude shown below. Each index figure represents, for that type of sales,

<sup>4</sup>The seasonal indexes were derived by the ratio-to-twelve-month-moving-average method.



the difference between the seasonal peak and the seasonal trough, divided by the seasonal trough, and converted to percentage form. Thus, the higher the index of amplitude, the greater is the extent of seasonal variation in those particular sales data.

The indexes of seasonal amplitude are as follows:

Industrial.....	10.6%
Commercial.....	13.9
Residential.....	45.1
Rural.....	29.3
Other.....	31.5

In contrast to sales to other types of users, sales to industrial and commercial users are relatively stable. This reflects a comparatively stable power requirement throughout the year. The commercial pattern seems to follow the expected seasonal movement until summer when there is a sharp bulge from July through September; this may well represent a recent development in the seasonal pattern brought about by the growing popularity of air conditioning in commercial offices and stores.

Industrial sales are the most stable of all, fluctuating relatively little during the year and exhibiting a peak in the winter. The low point in July is undoubtedly the result of the popularity of that month as the vacation period for many large plants, which often close for two weeks during the month.

Thus, the seasonal pattern of total electric power sales in Illinois, also shown in Chart 3, is compounded of several distinct types of seasonal fluctuations. Since the preceding section has shown that the rate of increase of electric power sales to different types of users is by no means uniform and that

the relative importance of these different types of sales in the aggregate state figure is undergoing change, the seasonal pattern for this aggregate is therefore likely to be neither stable nor representative of that of individual types of users.

### A Look into the Future

To derive a set of reasonably precise forecasts of future sales of electric power in Illinois requires a far more elaborate study than was possible in the present case. Even on the basis of this study, however, a number of pertinent observations can be made regarding probable future trends in the industry. It seems desirable first to summarize briefly the foregoing findings, as follows:

1. Total sales of electric power in Illinois between 1948 and 1955 have risen at a remarkably stable and constant rate, about 7 percent per year.

2. This increase is almost wholly accounted for by the growth in population and the expansion in income, particularly the latter.

3. Differential rates of increase characterized sales to different types of users during this period. Sales to industrial users, which accounted for more than half of the total in 1955, rose at a constant and slightly higher rate than the total. Commercial-user sales, about one-fifth of the total, rose at a lesser rate; residential sales, also about a fifth of the total, rose substantially more than the whole. Rural sales rose most of all, 10.6 percent per year on the average, but they constitute only a small portion of the total and, in contrast to the others, the *rate* of sales increase was a declining one. Sales to other

users actually declined during the period.

4. For all categories except "other," the increase in sales was due primarily to heavier use of electricity per customer rather than to an increase in the number of customers served.

Now, what can we infer about future trends from the foregoing results? For one thing, it appears that future growth in electric power sales is not only geared heavily to industrial activity but is likely to be increasingly dependent thereon in the future. A second inference is that, although the expected growth in population will provide continuing support for increasing electric power sales, the main support has to come from the more intensive use of electric power by individual consumers. In other words, future expansion of sales depends on more widespread use of electrical apparatus (including appliances) and on technological innovations.

A third inference, partly stemming from the preceding one, is that with

the current rapid rate of development of new and improved appliances, sales to residential users may well continue to increase at the same rapid rate as in the past, assuming that incomes are maintained.

A fourth inference is that some of the seasonal patterns in electric power sales are likely to be modified substantially in future years. This is particularly true of residential sales, where the widespread adoption of air conditioning may well create a secondary summer peak in place of the present trough.

A final inference is that the stability and constancy of the past annual rate of increase in electric power sales cannot be taken at face value. It is largely a manifestation of the rates of increase in income and population during the postwar years, which themselves have been highly stable. Any interruption in the rates of increase in these factors, particularly in income, would undoubtedly affect electric power sales as well.

**Appendix Table**  
**Seasonal Indexes of Electric Power Sales in Illinois, 1948-55**

Month	Type of user					
	Industrial	Residential	Commercial	Rural	Other	Total
January.....	102.1	125.1	106.4	115.3	114.2	109.0
February.....	99.9	120.2	102.4	112.0	105.9	105.7
March.....	103.9	109.4	100.1	110.3	107.2	104.3
April.....	100.9	101.9	96.3	107.1	96.8	99.7
May.....	99.1	91.9	93.4	101.5	91.8	95.8
June.....	99.8	88.5	95.7	93.9	88.4	95.3
July.....	93.9	87.3	102.5	93.1	87.7	93.6
August.....	98.5	86.2	102.6	89.4	91.5	96.7
September.....	99.8	88.0	101.5	92.1	92.2	97.0
October.....	101.2	91.2	96.8	89.2	100.0	98.0
November.....	100.6	98.4	99.2	94.4	109.1	100.2
December.....	100.3	112.0	103.1	101.8	115.3	104.7

# Wage Policy in Britain

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GREAT BRITAIN had a turbulent year in 1955 — in union activities, in government economic policies, and in politics. The Conservative Party was returned in the April general election in spite of the Labor Party's plea for votes on the basis of "fair shares" and the lowering of prices. To be sure, at the time of the general election the economic policies of the Conservatives had not been thoroughly tested. After a slump in 1952, business activity got away to a fast start in 1953 and the boom lasted into 1955. But at the beginning of 1955, a note of alarm was heard. Prosperity created an increased demand for imports, and the unions were asking for higher wages to compensate the workers for the higher cost of living. A monetary stringency appeared as the balance of payments began to go against Britain, and the value of sterling declined. Mr. Butler, as Chancellor of the Exchequer, jumped to the breach in the dike with monetary controls, and 1955 was, in part, a testing of this policy.

It is commonly questioned whether or not a basis for continued prosperity in Britain has been laid by the Conservative government. This is entirely aside from the fact that some leading industries such as coal, railroads, and utilities have been nationalized. That private industry has shown a buoyancy that was unexpected by the Socialists is undoubtedly true. But prosperity and the functioning of the economy in the best interests of the large number do

not necessarily go together, since profits may be too high, and real wages too low. The strong monopolistic element in the British economy limits the argument that is frequently advanced that the economy will naturally adjust itself to the interests of both producers and wage earners. The important fact is that business activity was at a high level, and it was prosperity itself that led to the argument that wage increases were inflationary.

The following pages describe some of the events that have given rise to the wage controversy — union activities, endeavors of the government to control the economy, and recent proposals about wage policy.

## Background

Great Britain has had full employment since 1941. Indeed, to *The Economist* and some others, it has had, in the last two years, overfull (brimful, some call it) employment, with the percentage of unemployment running at 1 percent or less. There is, indeed, evidence of overfull employment, in that overtime work has become a condition of employment in many industries. There are anxious people who argue that at least 3 percent unemployment is necessary to put a restraint upon inflationary wage increases (3 percent unemployment was a measurement used in Sir William H. Beveridge's *Full Employment in a Free Society*). No proof is advanced, nor is it clear theoretically,



that 3 percent is significantly less inflationary than 1 percent. The fact is, however, that there is no great labor reserve to draw upon. There is a shortage of labor in engineering, shipbuilding, and in the vehicle, electrical goods, instrument making, and other metal goods industries. There is a job for everyone, if the unemployed worker is willing to enter an industry that requires his labor. In May, 1955, there were 223,600 unemployed in a civilian labor force of 22,852,000; however, 60 percent of the unemployed men were over 40 years of age and mobility of labor is low in the case of the older workers.<sup>1</sup>

A glance at the national income statistics shows that money incomes have been moving upward. There has been a great increase in the number of income receivers within the income ranges between £500 and £1,000 a year, after income taxes are paid. These are the income groups of skilled labor and the lower-middle classes. In previous years, the concentration of these groups has been around the £500 level.

Month	Weekly rates	
	of wages <sup>a</sup>	Retail prices <sup>b</sup>
December, 1952...	100	100
December, 1953...	103	101
December, 1954...	107	105
May, 1955.....	113	106

<sup>a</sup> *Ministry of Labour Gazette*, Vol. 63 (June, 1955), No. 6, pp. 227 and 229. Index is for full-time weekly rates of pay in the principal industries and services in the United Kingdom. Data are adjusted to December, 1952, base.

<sup>b</sup> *Ibid.*, "All Items Index for 1947-1955." Data are adjusted to December, 1952, base.

<sup>1</sup> *The Economist*, July 16, 1955, p. 259; August 20, 1955, p. 608.

These gains are not in money wages alone. Labor has made some gains in real income, as the tabulation at the bottom of the first column shows. From December, 1952, to May, 1955, wages rose 13 percent, and retail prices 6 percent, the steepest rise in wages occurring in 1955. Until 1953, wages were chasing the cost of living.<sup>2</sup> The rapid rise in 1955 was brought about by union demands which received the approval of employers or of government wage tribunals. The rise caused some alarm, and there were demands for a wage and dividend freeze as a solution to what was thought to be "runaway" inflation, although no specifications were given as to how such a "freeze" might be made effective.<sup>3</sup> The general prosperity and increased earnings have been stimulated by increased government spending, large private investments, and rising exports.<sup>4</sup>

### Union Policies

It was surprising to some that the unions, in 1955, did not take greater advantage of the boom and ask for much higher wages than they did. There were, however, a number of restraints operating that kept wage de-

<sup>2</sup> Professor A. C. Pigou, in an excellent table, shows that average "real" wage rates were remarkably stable from 1938 to 1954. *London Times*, July 13, 1955.

<sup>3</sup> *The Economist*, September 3, 1955, p. 748.

<sup>4</sup> Copy of "Statement of Revenue and Expenditures as laid before the House by the Chancellor of the Exchequer when offering the Budget," Her Majesty's Stationery Office, April 19, 1955. Expenditures of £4,997 million for the fiscal year 1954-55 and estimated expenditures of £5,338 million for 1955-56 were the highest since the war.

mands down. The textile and shipbuilding industries were not sharing in the general prosperity. Some industries were reluctant to grant increases because they feared that wage rises might result in higher costs and reduce the export market.<sup>5</sup> But it was the trade union movement that exercised the major restraining influence upon higher wage demands. Many union leaders warned members about the inflationary dangers of wage increases in a period of full employment. They argued that the members' interests were best served by a long-run rise in real wages which would come from increased productivity, and not by an immediate increase in money wages. The Trades Union Congress, too, continued its established policy of going slow on wage demands.

These restraining influences, however, did not prevent strikes over wage differentials, special allowances, union representation, and working conditions. The strikes of 1955 were of a special nature; their purpose was not to raise minimum wages, but to secure *from the unions* recognition that the workers affected had a special problem that required consideration. A brief review of these disputes will show that basic union policies were strengthened, and made more uniform, rather than weakened, by the 1955 strikes.

Basic to these disputes was the prac-

tice that began in 1941 of granting wage increases as so many pence per hour, with the consequence that previous differentials in wages that had existed for years between the skilled and the unskilled were narrowed. It caused disputes between management and workers and between unions. Organized labor holds the government partly responsible, since it was the official arbitration tribunals during World War II and after that granted wage increases across the board as the cost of living rose. But this was only one cause, if an important one, for the 1955 wave of strikes.

The strike in the coal industry in April and May, 1955, illustrates the feeling among some employees that they deserved higher compensation than the National Coal Board was willing to pay workers of their classification. About 8,000 coal loaders demanded that mine deputies and foremen be given the authority to grant special allowances and to negotiate special rates for unusually difficult mining conditions, and when their request was refused the coal loaders struck. The Yorkshire mines, employing 87,000 men, closed down. It was an unofficial strike — an effort to convince the National Union of Mineworkers that the loaders had a serious grievance. The strike caused general concern since coal production was not increasing with national requirements, and imports of coal from the United States were making the balance of payments problem more acute. It was also regarded as an ill-omen for future industrial relations in the mines because the National Union of Mineworkers and the Na-

<sup>5</sup> *The Financial Times*, July 16 and August 17, 1955, using a statistical study of the United Kingdom Treasury entitled *Bulletin for Industry*, argues that British export prices were rising because of labor cost. The *Bulletin's* figures suggested that wage and salary costs per unit of output had gone up 27 percent from 1948 to 1954, but did not show that the higher wages resulted in higher export prices.

tional Coal Board had just put into effect a unified wage system that had eliminated many inequities and inequalities. The strike was settled on May 12, 1955, by agreement between the National Union of Mineworkers and the National Coal Board raising the loaders' allowance rates.

The coal strike was important in its effects upon economic prosperity, but in relationship to trade union policy its significance is far exceeded by the railroad and dock strikes. The railroad strike established Trades Union Congress (TUC) intervention in important disputes; the dock strike showed that the TUC would discipline its members for serious infractions of the rules. By a series of agreements and awards of arbitration tribunals, the National Union of Railwaymen (NUR) and the Associated Society of Locomotive Engineers and Firemen (ASLEF) had received approximately the same wage increases. The NUR (370,000 members) is an industrial union of railroad employees, including some engineers and firemen, and the ASLEF (67,000 members) is a craft union of engineers and firemen. Prior to World War II, the engineers and firemen had been highly paid, with a substantial differential over other railroad workers. After the various awards had been made, the ASLEF requested the Railway Staff National Tribunal to grant its members an increase of about 5 percent, a request that the Tribunal refused. Thereupon, the ASLEF declared a strike to take place on May 1, 1955, which it postponed at the request of the Trades Union Congress. Subsequent consultations did not settle the issue, and the

strike began on May 28, 1955. It was a dramatic strike. A Royal proclamation declared a state of emergency; inquiries about the government's dilatory actions in settling the strike were addressed to the Prime Minister in the House of Commons, and the Trades Union Congress intervened on its own initiative to work out a settlement. It ended on June 14, 1955, and subsequently Lord Justice Morris, an independent referee, granted the ASLEF about one-half of the union's request to some skilled men on the basis of proficiency and responsibility. The dispute turned the attention of the government and of the Trades Union Congress to the economic and social effects of wage differentials in full employment conditions; meetings of the Prime Minister with industrial and labor groups in July and August urged higher wages for skill and responsibility.

The dockers' strike concerned the issue of one union "poaching" members from another. Since 1924 the Trades Union Congress has regulated relationships between unions, and according to the Bridlington agreement of 1939, one union must not organize the members of another union without first reaching an understanding with the latter. The National Amalgamated Stevedores and Dockers (NASD) violated the TUC agreement by organizing 10,000 dockers who were members of the Transport and General Workers' Union (TGWU) without first reaching an understanding with that union. The NASD, a small union of 8,000 members, is a collective bargaining representative for its members in the Port of London. Most of the dockers are



members of the TGWU, which negotiates agreements for the industry, but the union has had difficulty in preventing "break-aways" by small groups who believe that they can gain more by representation through other unions. About 18,000 dockers struck in May, 1955, to secure recognition for the NASD. Their action delayed shipping in all ports, and exports and imports fell sharply. The union was suspended from membership in the Trades Union Congress for conduct detrimental to the labor movement, and the Disputes Committee of the TUC ordered it to give up the dockers it had organized in the northern ports. The strike ended on July 3, 1955, with enhanced prestige for the Trades Union Congress, although there were criticisms that the TUC had taken a high and mighty attitude and that its ruling had not solved the question of voluntary representation.

Other strikes in 1955 — the seamen, the electricians and engineers employed by the London newspapers, and the busmen — had much less effect upon total production. They were inter-union or intra-union disputes; they reflected dissatisfaction of groups of employees with union policies, wage differentials, working conditions, employment of extra men, working schedules, and the distribution of workers between areas and in occupations.

### Monetary Controls

Nevertheless, inflation was a major problem in 1955. As a first approximation it may be assumed, under full employment, that a government having at its disposal the various financial con-

trols that are available, and the knowledge of when and how to use them, has the means of preventing a serious inflationary movement from arising, if wages are not inflationary. The Conservative government was somewhat limited in the means that it could use, because of its heritage from the Labor Party. The latter used many types of controls; the former used relatively few, and in addition to fiscal policy, turned for its main reliance to monetary policy. In Britain's partially planned economy, monetary policy does not operate so effectively as is assumed in free enterprise. Manipulating the interest rate may not affect very much the supply of and demand for loanable funds. If the central government will loan to them, the local authorities may not need to finance themselves through the banks, and the same applies to the nationalized industries. International capital movements are controlled in practically all countries, and are somewhat insensitive to interest changes. It is hardly to be expected, therefore, that the money markets and the price level will respond immediately to government manipulation unless other controls are used in addition to the interest rate. Fiscal controls are the most effective means of bringing about the desired level of spending, but tax rates are already high and cut seriously into earnings and into funds that may go into private investment.

It is in this realm of relationships between costs and prices, consumption and investment, imports and exports, the reserve funds and the exchange rate of sterling that the Chancellor of the Exchequer can exercise the controls

that are available to him. On February 24, 1955, when a crisis in the balance of payments appeared imminent, Mr. Butler raised the bank rate to  $4\frac{1}{2}$  percent from  $3\frac{1}{2}$  percent. At the same time, he required an initial payment of 15 percent for the installment purchase of durable goods. At this time, the prices of some important imports turned down, and the balance of payments moved in Britain's favor. In its effects upon international trade, the monetary policy seemed to be successful; it should be noted, however, that the fall in import prices was caused by international competitive conditions, and not by the change in the British bank rate. The rise in the bank rate seemed to have no immediate effect upon internal prices. They continued to rise and the boom went on. The Chancellor probably added to the flames by his budget proposals of April 19, 1955, in which he recommended a reduction of 6 pence to the pound in the standard rates of the income taxes and other reductions in taxes.<sup>6</sup> He attempted to justify this course by saying that the taxes were too great a burden, and that the Exchequer had a surplus of £433 million and did not need the money; but it was, of course, politically expedient to ease up on fiscal controls immediately prior to a general election. However, it may not have been economically wise. In fact, his policy after the election was an abrupt turnabout, and he found it necessary to impose additional brakes on demand. The initial payment for installment pur-

chases was raised to  $33\frac{1}{3}$  percent; the banks were requested to review their overdrafts and to curtail future loans; the local councils were ordered to reduce their intended building programs except for slum clearance, and the nationalized industries were asked to review their planned investments to effect economies.

In some sectors, there were immediate reactions helpful to the credit squeeze imposed by the Chancellor. Installment purchases declined in August; interest rates were raised generally; and for a brief period the banks increased their cash reserves. But it was soon evident that these measures were not sufficient to check the rise of prices. Although the Committee of London Clearing Bankers appealed for public cooperation to reduce the volume of bank credit, the banks found it inexpedient not to grant new credits, since if one bank refused a loan, a competitor might approve it. With monetary restrictions not going too well, the banks complained to the Chancellor that they could not reduce loans with government spending proceeding at a high level. These references were principally to subsidies for new residences in developing industrial areas, and for additional investments in the nationalized industries.

But there was an additional reason for the pressure upon bank credit. Profits had been rising steadily since the middle of 1953, and showed no sign of leveling off. For the second quarter of 1955, gross trading profits for 1,000 companies amounted to £864.2, which was 15 percent higher than for the same quarter in 1954. Div-

<sup>6</sup> *Parliamentary Debates* (Hansard), House of Commons, April 19, 1955.

dividends were 32 percent higher. There were profit increases in practically all industrial groups — only shipping, silk, and rayon showed declines.<sup>7</sup>

Although the balance of payments crisis was over in September when the value of exports increased, Mr. Butler, in his Supplementary Budget of October 26, 1955, added to his restrictions upon demand and government spending. The purchase tax upon clothing and on some other items was reimposed and the rates raised by one-fifth; the tax on corporate dividends was increased from 22½ percent to 27½ percent, and telephone and postal rates were raised. Government building was severely curtailed, and rental subsidies were reduced or taken away completely. Thus the year ended with a highly restrictive monetary policy in effect and with drastic attempts being made to curb the consumer's market.<sup>8</sup> The obvious aim was to reduce the demand for imports, but the higher interest rates also discouraged investment in industries producing exports. The Supplementary Budget showed evidence that the government was working at contradictory purposes. Long after the first attempts (in February, 1955) to check the rise of credit by monetary means, the government found it necessary to reduce spending. At the same time, it imposed restrictions upon consumer demand and allowed the cost of living to rise. The unions have already pro-

posed wage increases to recover this loss of real wages.

Three major mistakes made these financial policies ineffective: it was thought that the culprit causing the excess spending was wages, but in actuality the wage increases may have been merely a part of the normal process by which income is distributed in a period of great prosperity; sufficient recognition was not given to the role that government spending played in adding to the total investment; and it was not sufficiently recognized that private investment spending, added to government spending, was an immediate cause of the boom. To these may be added the failure to use fiscal policy effectively as an aid in stabilizing the economy at the level that the government desired, and this explains, in part, the too-great reliance upon monetary policy.

The wage policy that has come about is a regular, yearly demand by the unions for an increase in money wages. Since 1938, the yearly average rate of increase has been about 4 percent. It is an uncomplicated, unsophisticated formula which is closely related to the cost of living and the rise in productivity.

By an odd paradox, the strength of the labor movement has made it weak in bargaining power. Labor is too close to the government and to the interests of the national economy to be a ruthless bargainer. In a private enterprise economy, as in the United States with its single-minded unions, it may be assumed that the unions generally will drive a hard bargain. But the Trades Union Congress is in a dual position:

<sup>7</sup> *The Economist*, July 23, 1955, p. 340.

<sup>8</sup> *Ibid.*, December 31, 1955. Mr. Harold Macmillan, who succeeded Mr. Butler in the Chancellorship, raised the bank rate to 5½ percent in February, 1956, even though there were strong protests from the banks and from some sections of business.



it is represented on government advisory bodies; it is consulted by the government upon all major policies involving labor directly; it has its members in the Labor Party speaking for labor in Parliament. Economically and politically labor is strong, but in wage bargaining its demands are restricted by considerations of cost and the fear of inflation. It hopes to make its real gains by increased productivity, by requiring management consultation on all matters important to labor, and by legislation beneficial to the working people. In 1955, the employers and the government took advantage of labor's wage restraints, and pushed forward to high profits. It is because of these contradictions that the trade unions and a Labor Party committee have been led to a re-examination of the role of wages.

### Wage Policy Proposals<sup>9</sup>

A proposal from the Labor Party returns to the idea of "fair shares." A major criticism of the current method of wage determination is that it results in inequality—inequality between those who get profits and those who earn wages. Another inequality also exists, between workers in very productive industries and those in industries in which productivity and wages are much lower. From a social standpoint, the highly productive industries may be much "less essential" than those of much lower productivity, but they can and

do pay much higher wages, and adjustment between them is not made by the "natural force" of labor mobility. One problem is to determine the "essential" and "less essential" industries and then to see that any wage increases due to a rise in national productivity are properly shared with the workers in the less productive sectors. A national tribunal might be created whose major activity would be the dividing up of a wages fund, the amount of which would be determined by government and set aside from the national income. The tribunal would be guided in its division by what it believed to be the most important economic needs of the time. The employers and unions would actually translate the allocated sums into wages rates, giving due weight to "justice between workers," which might include pay differentials for workers of greater skills than the average, and possibly extra compensation for workers of greater needs.

These discussions and proposals raise problems of planning in an important area, which initially the national wage tribunal would have to resolve: What is to be produced? In what quantities? How is labor to be allocated? What should be the allocation of resources for present and future requirements? These are only a few "hard ones" for which the tribunal must find answers. The Labor Party people believe that they have partial answers, at least, from their experiences during 1946 to 1951. But the determination of the "just wage" may present additional difficulties. A wage based on "merit" requires specifications to be meaningful; a wage paid for a "contribution of in-

<sup>9</sup> The Labor Party's conference on wage policy, as reported in the *Manchester Guardian*, July 14, 1955, is summarized in the following paragraph. Conferences on various subjects continued throughout the remainder of 1955.



dividual service" would appear to approach the competitive marginal value product wage which has little meaning in a planned economy; a wage supplemented by extra payments for need makes a wage based on merit of little value. The difficulty may be resolved by the unions and employers adopting a minimum wage, with wage differential based upon skill and responsibility, and urging upon government the extension of free services, which could make up a very considerable share of every family's income. (Considerable thought has been given to the "just" wage by Barbara Wootton in her *Social Foundations of Wage Policy*. She would have the wage distribution authorities favor the lower paid workers to give them the benefits, economic, political, and ethical, of an equalitarian society.) But it must be said that the trade unions have shown little interest in doing away with their craft unions. In fact, the labor movement has been disposed recently to see values of solidarity in the crafts, and previous preferences for the industrial and general union types of organization are no longer so evident.

But the proposals do not stop here, since some Labor Party members would like to see nationalization extended to all durable goods industries and many areas of distribution. In an almost completely nationalized economy, wage policy would have a different role, because prices and profits would no longer be determining forces, and labor could be allocated by directives, by wage differentials, or by various subsidies.

The experiences of the Labor Party in the years of scarcity from 1946 to

1951 throw some light upon how far a policy of directives and controls can go and retain the support of the labor movement. In a government White Paper entitled *Statement on Personal Incomes, Costs and Prices*, issued in 1948, the Labor Party asked the unions to exercise restraint in wage matters, in order to prevent inflation and to keep down the cost of exports. With some hesitation, principally because they were not consulted by the government prior to the issuance of the White Paper, the unions agreed. As a corollary to this policy, many unions have energetically cooperated in measures to promote greater industrial efficiency. But it is doubtful that the unions will lend themselves to the strict discipline that the proposals now being discussed require. The unions do not like directives imposed from above. The central problem of wage policy within the unions is that of bringing national decisions to bear on individual wage settlements without weakening the trade unions or sacrificing the flexibility which is the great merit of the British system of industrial relations.<sup>10</sup> Too great an emphasis upon discipline in the trade unions would partly destroy the autonomy of the local bodies and affect adversely the principle of voluntarism, which are valuable attributes of British trade unions. For these reasons, a wages fund, determined by the government and administered by the employers and the unions might be costly in disputes if members resisted the wage determinations allotted to them.

<sup>10</sup> Allan Flanders, *A Policy for Wages*, Fabian Tract No. 281, July, 1950 (Fabian Publications Ltd., London).

Mr. R. G. Hawtrey,<sup>11</sup> Sir Dennis Robertson,<sup>12</sup> Professor A. C. Pigou,<sup>13</sup> and Professor J. R. Hicks,<sup>14</sup> among others, have recently re-examined the role of wages in the British economy, especially the effects of rising money wages in a period of full employment.

In general, these thoughtful and provocative discussions have had the effect of calming the fears of those who see an inflationary effect in every wage increase. Besides pointing out that price

<sup>11</sup> *Cross Purposes in Wage Policy* (Longmans, 1955).

<sup>12</sup> Stamp Memorial Lecture, 1954.

<sup>13</sup> Stamp Memorial Lecture, 1955.

<sup>14</sup> Presidential Address to the Economics Section of the British Association, September, 1955.

increases may have been caused by international monetary or market conditions and may have preceded the wage rises, these studies have re-emphasized government findings that productivity may continue to rise at a rapid rate during full employment. Under these conditions, wage increases may not contribute to rising costs, but may merely be a part of the normal distribution of incomes. In any case, the international monetary conditions contributing to price increases may be losing their inflationary effects, and the rise in prices in Britain may soon be halted. If so, the monetary controls that the government has instituted may be effective in stabilizing the economy.

# Taxation and Urban Transit: A Comment

JOHN F. DUE

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IN THE FEBRUARY ISSUE OF *Current Economic Comment*, the article by E. L. Tennyson stressed the importance of improved private-right-of-way rapid transit facilities as a solution to the problem of traffic congestion in urban areas, and the need for public assistance in the development of such facilities. This point of view has very substantial merit, and the article has performed a useful function in calling attention to the neglect of this approach to the traffic problem.

Unfortunately, however, Mr. Tennyson sought to place a major share of the blame for the unprofitableness of private transit on the tax system, and in so doing made several statements which are open to serious question:

1. His statement that the urban automobile is "exempt from general taxes" (p. 45) is erroneous. In most states (about two-thirds), cars are assessed as personal property, and subjected to the property tax rate, the revenue being used for general governmental purposes. It is true, of course, that the highways, as such, are free of tax, whereas the private transit right of ways and track are taxed, and the use of private cars gives rise to no income or state corporate tax liability.

2. The statements that "A principal obstacle in the way of the construction of necessary high capacity transit facilities is the Federal income tax" (p. 45) and "It must be recognized that the Federal income tax has ruled out pri-

vate capital . . . as a solution to the transit and traffic problem" (p. 52) are difficult to defend.

In the first place, the income tax does not place a discriminatory burden on industries such as transit with a low ratio of annual receipts to total investment, as he argues, unless, typically, the corporate tax is shifted to consumers. So long as the tax is borne by the owners of businesses generally, the overall average rate of return on invested capital is reduced, and thus the return (after tax) necessary to attract capital into all industries is lowered. If, for example, the average rate of return has been 10 percent, and a 50 percent income tax is imposed and is not shifted to consumers, the average rate of return — the figure necessary to attract capital into an industry — is lowered to 5 percent. All industries are left in the same relative position with respect to their ability to raise capital as they were before the tax, regardless of the ratio of annual receipts to invested capital.

If the corporate tax is generally shifted to consumers, and thus the typical rate-of-return figure is left unchanged, the low ratio of receipts to investment in the transit industry would be a source of injury to the industry. The percentage increase in rates necessary to restore the old rate of return would be substantially greater than in other fields, and perhaps infinite — that is, it might prove to be impossible to restore the old rate of return by any

fare increase, no matter how great, because of the loss of business. In this case the ability of the firms in the industry to raise capital would be impaired.

To what extent is the corporation income tax actually shifted? The question has been debated extensively in the literature of public finance, but no conclusive answer can be given.<sup>1</sup> The dividend-credit provision introduced into the Federal personal income tax in 1954 was, of course, based upon the assumption that the tax is not shifted to the consumers. It is generally regarded as most unlikely that the tax is entirely or even primarily shifted.

But the more important, and less debatable, objection to the Tennyson statements is the obvious fact that most rapid transit rail facilities would not yield an average return on investment even if they were completely free of income tax. One has only to look at the operating statements of existing rapid transit systems to be convinced of their unprofitability — even though the existing facilities were built at much lower cost than the present replacement figures.

For example, the New York subway, despite a tremendously heavy traffic density, is barely able to cover operating expenses. It is most unlikely that further fare increases would improve the situation because of the effect which

they would have in curtailing the volume of business — and the decline in business would aggravate the traffic problems. The situation is similar in Boston. Essentially rapid transit operations of the Hudson and Manhattan Railway and the Long Island Railroad are barely able to meet operating expenses; in the Chicago area the shore line route of the North Shore has been abandoned in the last year and the Chicago, Aurora and Elgin is on the point of abandoning all service. Of present rail rapid transit systems, not more than two or three can be regarded as at all profitable.

The unprofitability of rapid transit is demonstrated even more clearly by the reluctance of municipal transit authorities, not affected by the Federal income tax, to build additional rapid transit facilities, even though the need for them is clearly recognized, because it is obvious that the facilities would not pay for themselves and earn interest on investment. In Chicago, for example, the Transit Authority, which by law must cover its costs, is unable to build badly needed extensions; lines now being built or projected are being financed by the city itself from tax revenue. In Toronto, the urgent need for additional subways is generally recognized, but the Toronto Transit Commission is unable to finance them, as it is recognized that they cannot cover all of their costs. The extensive rapid transit system proposed for the San Francisco Bay area likewise rather clearly cannot pay for itself; a fare that would perhaps come close to permitting costs to be covered would cause so much loss of traffic as to defeat

<sup>1</sup> See for example the extensive discussion by R. Goode in *The Corporation Income Tax* (New York: John Wiley and Sons, 1951), Chap. 4; C. Shoup "Incidence of the Corporation Income Tax," *National Tax Journal*, Vol. 2 (December, 1949), pp. 12-17.



the primary purpose for which the system is needed — to relieve highway congestion.

The basic difficulty lies in the relationship between costs of rapid transit construction and operation and the prices users are willing to pay. It is not the Federal income tax that makes it impossible to develop rapid transit by private capital; it is the basic cost-demand situation, and Mr. Tennyson confuses the whole picture by insisting that the tax is to blame. The electric power and telephone industries have had no difficulty in raising capital despite their low ratios of annual receipts to invested capital. It is true, of course, that if (1) transit lines were reasonably profitable and (2) the corporate tax were shifted to consumers in most industries while it was difficult for the transit industry to do so, the tax might interfere with the raising of capital for transit purposes. But this is not the situation.

3. His charge that "abandonments are not usually caused by lack of need, but by income tax refunds payable on book losses resulting from the writing off of nondepreciated property, together with the fact that liquidation profits are taxed at only half the rate applicable to operating profits" (p. 46) is indefensible, except perhaps in rare instances. The most cursory study of actual abandonments of rail lines reveals that in virtually all cases the cause has been simply the unprofitability of operations. In some instances trackage has been retained for freight service when passenger service has been discontinued, and thus there has been no chance of gaining the privilege of deducting the

value of undepreciated track for tax purposes.

His line of reasoning is apparently intended to apply to street railway lines as well as rail rapid transit lines (as suggested by his footnote reference to Capital Transit). But a number of the systems which have made the most extensive abandonments in the last decade are municipal ones—in Chicago, Cleveland, Detroit, Brooklyn, and San Francisco, for example—which are in no way affected by income tax features. While other factors besides relative costs have influenced municipal policy, study of actual municipal abandonments makes it clear that in most cases higher costs of rail facilities have been responsible. At the same time some of the systems which have been the slowest to abandon rail lines are relatively profitable private ones, which have the most to gain from the tax deduction feature—Pittsburgh, Philadelphia, and Washington (until Wolfson policies caused Capital Transit to lose its franchise), for example.

I share Mr. Tennyson's point of view that rail rapid transit vehicles offer a much more satisfactory solution to the urban area transit problem than buses, and agree that abandonments of private-right-of-way lines have been unfortunate, from the standpoint of provision of satisfactory service. But his persistence in placing the blame on the tax system, while other factors are mainly responsible, merely confuses the issue and interferes with the development of a satisfactory solution.

These criticisms are not intended to contradict the central thesis of the Tennyson article—that improved ex-

pressways cannot solve the metropolitan area traffic problem alone, and that improvement and extension of rail rapid transit facilities are highly desirable. These lines can justifiably be financed by governmental agencies and supported in part by taxes, because of the

important indirect benefits which they make toward elimination of traffic congestion and preservation of downtown areas — benefits which the transit system cannot realize on, financially, but which represent very real gains to the community.

# Taxation and Urban Transit: A Reply

E. L. TENNYSON

*Traction Commissioner, Youngstown, Ohio*

THE COMMENTS of Professor John F. Due on my article concerning the urban transit problem display a common misconception on this subject. By separating facts from popular conceptions wrongly held, I shall attempt to clarify my original presentation to clear up the questions raised by Professor Due.

Professor Due challenges my statements on taxes, both property and income. He asserts that rapid transit (on private right of ways) cannot usually support itself, even if it has tax equality with automobiles. He charges that abandonment of essential facilities has been "virtually all" for economic reasons, rather than for discriminatory policies. I am pleased that he agrees with the basic point of essentiality of rapid transit, however it is paid for.

Although it is not the case in Ohio, it is readily admitted that some states levy property taxes on automobiles. When I point out that automobiles contribute nothing for general taxes, I refer to the fact that the automobile costs more than it pays in taxes, subtracting from general tax revenues rather than augmenting them. In addition to the proof cited in my February paper (page 45), I have since learned that Baltimore and New York have reported detailed figures on the drain on general tax funds caused by governmental expenditures in behalf of automobile operation. In Baltimore, for example, the city suffered a loss of \$1,560,000 on

automobiles, after credits in lieu of property taxes, whereas the city made a "profit" of \$727,500 from taxes on transit operations (Ordinance of estimates for 1955). If the unequal tax situation were corrected, or reversed, it would be possible to reduce transit fares and increase transit service, with the end result that even automobiles would benefit from the reduced congestion.

It is patently unfair to charge, as Professor Due does, that my explanation of tax impact on transit cannot be defended. The facts were included in my article. Professor Due does admit that the income tax "would be a source of injury to the industry" if the tax were passed on to consumers. It should be sufficient to point out that every rate case coming to my attention and upheld by the courts has shifted the full impact of the income tax to consumers. Tax-exempt government securities compete for the investors' dollars, so private money must produce a much higher return to compensate for the risk, if private money is to remain important to our economy. In any event, there is no tax similar to the income tax which applies to automobile operation. The transit rider is not concerned with what is exempt and what is not. He is concerned only with the end result.

If Professor Due would look with a searching eye at rapid transit operating statements, he would not be "convinced of their unprofitability." I have already

cited the case of Chicago where rapid transit carries people more cheaply than surface vehicles when the length of their ride is considered. In New York, since the creation of the Transit Authority two years ago, rapid transit has had an operating profit of \$20,775,450 whereas city buses with a smaller but potentially more lucrative volume of business lost \$5,968,659 (Moody's). After debt interest and amortization, there was a real loss of \$74,689,907 last year, but that is city policy and in no way the fault of rapid transit. Where express bus operation is somewhat self-sustaining, as in St. Louis, Detroit, and Pittsburgh, it requires fares of 25 cents per ride. If this same rate from smaller cities were applied to New York rapid transit, there would be a profit, or return on the investment, of about 15 percent — nearly four times as much as would be required to attract capital for municipal enterprise.

In Philadelphia, the transit company pays \$4,000,000 per year for the use of publicly built rapid transit facilities. This is a private company enjoying no subsidy, and operating profitably with fares that are no higher than in other large cities with tax-free municipal surface operations.

Toronto's new \$50,000,000 rapid transit project was built entirely without tax help, and must now pay taxes. It is costing about 2.86 cents per ride to pay amortization and interest costs on this excellent facility, but it is saving much more than that in increased efficiency. Sixty-seven percent fewer men are moving 150 percent more people, and doing it better. There is a transit subsidy in Toronto, but it is

caused by a desire to hold to a 10 cent fare on all lines, and has no relation to the subway. Even without the subsidy, but with rapid transit, Toronto would have the lowest known metropolitan fare.

Further examples of the operating economy of rapid transit can be found in Cleveland where there are two separate rapid transit systems — one brand new, and both paid for entirely from passenger fares after taxes, just as if they were private property. On the new facility, operating expenses and capital recovery at 4 percent compound interest amount to 20.4 cents per rider (for a much longer ride than in Toronto). For an even longer ride on the older facility, costs average 19 cents per rider. This older system is independent, with no transfers or joint costs to distort its record. It has been able to pay all of its expenses, interest, and taxes with 85 percent of its revenue in each of the past five years, with 15 percent of its revenue left over for "profit."

Contrasted with these successful rapid transit results is the fact that the two expressway bus lines in this same city operate at a cost of 19.9 cents per passenger on the shorter route, and 29.1 cents on the longer route. The service rendered is as similar as possible to rapid transit service. The rapid transit lines now attract 20,000,000 annual riders, but the expressway buses get only 5,500,000 even though the buses have been in service several years and have much better downtown distribution than the rapid transit (Cleveland *Plain Dealer* reports).

Reference to the success of the electric power and telephone industries by



Professor Due, in spite of the high taxes they pay, is an irrelevant diversion. These industries have no direct competition from the government in areas where they remain in operation. Where electric power is subject to government competition, as it was in the Tennessee Valley, the private company was able to claim confiscation, went to court, and got real cash in exchange for its property. It did not have to continue in service, as transit must do when new highways are built to skim the cream off the basic traffic. A power company is not analogous to transit for this reason.

As for abandonments of rail transit lines, Professor Due is correct that other factors were present in addition to taxes. Lack of modernization capital because of low return on investment after taxes was a prime factor. The largest cause of abandonment was probably the policy of bus, tire, and oil businesses, which purchased operating control of transit operation in at least 60

cities from New York to California, and from Wisconsin to Florida. (See U. S. Court of Appeals, 7th District, 186 Fed. R. 2d 562.) The courts have acted in the matter, but not in time to prevent abandonments. Where untaxed municipal railways have been abandoned, a primary reason has been the unwillingness of political management to shift from the outmoded two-man car to the modern one-man vehicle. Another reason has been the pressure of public works officials to get rails off the streets, and to obtain the private right of ways for highways which would in the end be able to move less people.

In summary, if tax support is to be continued and extended for highway systems, it must in fairness be extended to rapid transit. Under conditions of economic equality, rapid transit can be fully self-sustaining. In fact, if conditions were equalized, many rapid transit lines could show a better return on investment than highways now show.



## Books Reviewed

*Distribution's Place in the American Economy since 1869.* By Harold Barger (Princeton: Princeton University Press for the National Bureau of Economic Research, 1955, pp. 222. \$4.50)

The physical size of this little volume is a wholly inadequate index of its value as a research document. The product of painstaking research, considerable ingenuity, and some bravery, it is a basic contribution to our knowledge of distribution, an area of our economy that too long has been sadly neglected by statistical research.

The book is in three parts. Part I considers trends in employment and output in distribution and production and combines them into measures of productivity. Part II analyzes the history of distribution cost and channels. Part III consists of a series of extremely valuable appendixes dealing with method and sources of data.

The report's major conclusions are that (1) between 1870 and 1950, distribution absorbed a rapidly increasing share of the labor force at the expense of commodity-producing industries, and man-hours devoted to distribution rose by about 2.3 percent per year, compared with 0.7 percent for commodity-producing industries; (2) between 1869 and 1949, the net output of distribution rose about 3.3 percent per year whereas commodity production increased 3.1 percent per year; (3) as a result, productivity (output per man-hour) in distribution rose at a mean annual rate of 1.0 percent whereas productivity in agriculture, mining, and

manufacturing industries was rising at an average rate of 2.6 percent per year; (4) the cost of distribution, measured in terms of value added by distribution as a percentage of the retail value of commodities handled, appears to have risen slowly from 1869 to 1929 and to have remained about the same between 1929 and 1948; (5) the importance of the wholesaler in the over-all distribution picture declined from 1889 to 1948, but the decline was due to the rise of retail outlets (chain stores, department stores, and mail-order houses) which traditionally skipped the wholesaler and not to any decline in the extent to which wholesalers supplied their normal retail outlets; and (6) gross wholesale margins, gross retail margins, and the over-all distributive spread rose gradually from 1869 to 1947 for most kinds of outlets.

Mr. Barger has carefully qualified his conclusions and has examined his statistical techniques with great objectivity; it will be no fault of his if anyone uses the results too cavalierly. A special vote of thanks is due for the clarity with which estimating procedures have been described and the explicitness with which even implicit assumptions have been stated.

This is essentially a quantitative study in the field of distribution. (And with the exception of a few minor points, it is certainly a model of such a study.) It is not a study of the field of distribution, as its title implies. Mr. Barger's analysis is concerned almost entirely with the wholesale and retail trade industries, and in important sections of

the study, the wholesale segment is limited only to that portion which forwards commodities through retail outlets on their way to consumers. The author recognizes the limited scope of the study, but he does not give the reader a clear statement of the study's concept of "distribution" until page 62. The choice of the particular concept is not questioned since it was practically dictated by the nature of the available data, but at least to this reviewer, it seems that the definition of "distribution" merited greater and more prominent space.

Although I do not believe the study's conclusion would be affected, it seems to me that two assumptions with respect to hours worked per week (Table 5, page 11) are questionable. One is the assumption that weekly hours in agriculture were constant throughout the period, 1869-1949; at least during the last ten years of the period the agricultural workweek appears to have declined significantly, according to estimates of the Bureau of the Census in its *Monthly Report on the Labor Force*. The other is the assumption that hours in retailing may be taken to represent hours in wholesale and retail trade combined. The BLS estimates cited in partial support of this assumption show hours for wholesale employees close to those in retailing. Since the figures Mr. Barger uses are inclusive of unpaid family workers who normally work much longer than other employees and since unpaid family labor is much more important in retailing than in wholesale trade, I would conclude that the derived hours in retailing would be too

high to represent combined wholesale-retail hours.

Critical comments, no matter how minor, always end up taking too much space. This review is no exception and I would, therefore, like to re-emphasize my opinion that Mr. Barger has given us a rich research document which deserves wide, attentive reading and which should stimulate further good work in the quantitative measurement of all aspects of distribution.

THOMAS C. FICHANDLER

Twentieth Century Fund

*Monopoly in America: The Government as Promoter.* By Walter Adams and Horace M. Gray (New York: Macmillan Company, 1955, pp. xv, 221. \$3.50, text edition \$2.75)

If Galbraith's "Countervailing Power" ever suggested that government could be automatically relied upon to counter private centers of concentrated power, Messrs. Gray and Adams have successfully dispelled that illusion in their *Monopoly in America*. This volume is not concerned with the use of conventional antitrust measures to enjoin practices or dissolve concentrations. The authors' thesis is that government has abdicated its power to promote indirectly and painlessly a more competitive economy through the innumerable fiscal and regulatory functions which are inevitably performed by a modern government.

Brought together for the first time in one volume is an impressive sampling of the activities by which the Federal government has served either to foster



greater market concentration and giantism or (through the practice of "neutrality" and indifference) to renounce opportunities to erode existing positions of power.

The Federal government's regulation of motor and air transport is severely criticized for having made sacrosanct the "grandfather clause." Advocated is a substantial de-regulation in this area to facilitate freer entry and greater price and service competition — control being limited to police action in the interests of safety and minimum standards of performance. The FCC is criticized for its ill-considered allocation of TV channels and for its failure to promote UHF as a means of maximizing the technologically feasible level of competition in network television.

Although recognizing that technological considerations dictate that dominant firms will inevitably receive a large share of defense procurement contracts, the authors offer convincing reasons for believing that the giants have received an undue share. Moreover, recognizing cause and effect relationships, they emphasize that procurement agencies have neglected the long-run interest of promoting additional sources of supply. They criticize the use made of scrambled plants and purchase options in conjunction with government-financed expansion of productive facilities during World War II. The disposals of the Geneva Steel works and synthetic rubber facilities, where such encumbrances were not involved, are cited by the authors as constituting shortsighted examples of abandoning a competitive goal. The Atomic Energy Act of 1954 comes under criticism for failing to re-

quire compulsory licensing at reasonable royalties for an indefinite period of all patented developments involving the utilization of atomic energy. The authors point out that \$12 billion of atomic research was financed with government funds between 1946 and 1952, that a few privileged firms have inevitably received a head start, and that government financing of cost-plus atomic research by a few firms is likely to continue in the immediate future.

In the area of tax exemption, the authors convincingly argue that the 27½ percent oil depletion allowance, the wartime accelerated amortization privileges, as well as the 1954 rapid depreciation legislation more frequently have the effect of favoring Big Business. Furthermore, they suggest that the virtual lack of progressivity in the corporate income tax combined with the generous deductions allowed for all "costs of doing business" (such as advertising, service costs, public relations, and legal services) inevitably tend to favor the continuing success of the giant corporation. The reviewer would add that a further logical consequence of extending the progressive tax principle to corporation income would be the encouragement of more frequent voluntary dissolutions of divisions of giant corporations into independent corporations.

Several provocative suggestions are raised in the course of this treatise. The reviewer would especially like to see further research done on two of these. The authors argue (p. 116) that the administrative bureaucracy in both attitude and action is largely ambivalent with respect to the impact of its own

assignments upon competition, and they call for "philosophic reorientation" of the executive branch of government. The authors also suggest that we liberal economists have become so enraptured with the Keynesian aggregative economics that we have begun to select our policy problems on the basis of a monistic standard, "What will be the effect on full employment?" (p. 175). I suspect that the perversion of the role of government has stemmed in large measure from both of these conditions.

In conclusion I think it is only fair to add that the book is frankly a polemic, yet no more so than Schumpeter's classic defense of monopoly. However, and unlike the latter, the authors do confess to their sins of "occasional overzealousness and extravagance" (p. viii). Polemics are primarily written to persuade the layman, yet the specialist will also benefit when the polemic's thesis is novel, important, and well stated. This thesis meets these requisites.

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*Mainsprings of the German Revival.* By Henry C. Wallich (New Haven: Yale University Press, 1955, pp. ii, 401. \$4.50)

The rapidity of the economic recovery of West Germany from a battered, almost non-functioning economy at the end of the war to a leading producer and exporter in the early 1950's has been called a miracle by many observers. Although the recovery may, in 1956, seem to have outstripped itself and called for anti-inflation measures by the monetary authorities, this need

not obscure the genuine progress made in the first postwar decade.

Professor Wallich's analysis of the German recovery lays primary emphasis on the conservative policies of Economics Minister Erhard and the reliance on free-market incentives to the maximum extent possible under the circumstances. It would be a mistake, however, to conclude that Germany became a free-enterprise, laissez-faire economy. Actually, a fairer assessment seems to be that where there was a choice between less control or more, the German authorities usually chose less.

Many direct controls over production, materials, manpower, investment, and foreign trade remained. But primary reliance was placed upon fiscal and monetary policies to maintain a sound currency and a stable price level in order to provide an environment conducive to the expansion of production.

Professor Wallich does not overlook the element of chance in the German recovery. Even developments that seemed to be disasters at the time worked out well. The East-West split meant, for example, that West Germany could buy food cheaper on the world market than from tariff-protected East Germany. The flood of refugees to West Germany, again, provided a pool of labor.

The book is a systematic and thorough evaluation of the separate factors contributing to the recovery. The currency reform was, of course, basic to a revival of commerce and production. The Korean boom contributed greatly to Germany's ability to export machinery. Labor's position pre-

vented unions from gaining a large share of the increased productivity, thus permitting a rapid rise in profits, which in turn made the growth of investment more rapid. Tax policies geared to favor savings and investment greatly speeded the growth of industrial capacity. Foreign trade policies designed to open up trade, for the benefit of German export industries, also contributed. Allied aid was crucial in the early post-war years, and the split with Russia reversed the Allied attitude from considering Germany an enemy to accepting her as an ally.

Professor Wallich also concludes that the German recovery was not solely a problem in reconstruction but an illustration of growth as well. He inserts early in the book a chapter on economic development in which he contrasts the views of those who emphasize the roles of consumption with the views of those who favor investment in developing economies.

This is a solid investigation of the economics of recovery in Germany. It is a thorough and painstaking piece of work. It contributes to the revival of acceptance of monetary policy as a powerful economic tool in competition with direct controls.

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*History of the Standard Oil Company (New Jersey): Pioneering in Big Business, 1882-1911.* By Ralph W. and Mureil Hidy (New York: Harper and Brothers, 1955, pp. xxx, 839. \$7.50)

Sponsored by the Business History

Foundation and financed largely by a grant from Jersey Standard, this book is the first in a series that will eventually complete the company's history. It is based primarily on records and correspondence hitherto unavailable to historians and on other materials used by previous writers. The Hidys have been able to present for the first time the dramatic story of the early years of Standard Oil's foreign operations and negotiations, and they throw new light on the middle period of Standard's famous top-management committee system. In other respects the book somehow fails to jell. Because of the importance of its subject, and because it is apparently viewed in some quarters as a very model of a modern business history, it seems desirable to examine the nature of its deficiencies in more detail than would otherwise be warranted.

*Pioneering in Big Business* suffers from a plodding and undistinguished style. In a shorter work, this failing could be overlooked; in a treatise of 320,000 words (including footnotes), with hundreds of thousands more to follow, it is a serious one. The historian who paints on a vast scale, whether he be Gibbon, Sandburg, Churchill, or the Hidys, assumes an obligation to make his design meaningful and its contemplation pleasurable. If the reading of history does not at least border on an aesthetic experience, it can convey little of value as history although it can of course provide rich raw material for historians.

The corpus of the book creaks and groans with a surfeit of facts whose relevance is frequently far from self-evident. A not atypical sentence (pp.



93-94) tells us that Standard Oil companies monopolized the patents for the mechanical fabrication and filling of cans; that in the New York area the management found this ownership to be unduly diffuse, and vested it in the Combined Patents Can Company; and that 7 of the 22 patents so concentrated had been originally issued to one Herman Miller of Devoe Manufacturing Company. Neither Miller nor the Combined Patents Can Company emerge again to the printed page, leaving the reader to draw his own conclusions about the importance of can-filling patent monopolization.

In an obvious attempt to smooth the way the Hidys resort to the very liberal use of topic sentences, which, in view of the widely diverse hunks of company experience embedded in the paragraphs that follow them, are decidedly misleading in their simplicity. Thus, in the space of two pages appearing in the chapter on "The Domestic Scene, 1892-1899" there are encountered in rapid succession (1) the techniques by which the Seep Agency quoted crude prices in the Appalachian area, (2) the demise of the Titusville exchange, (3) price gyrations in Pennsylvania crude in 1895, (4) expansion of total pipeline mileage throughout Standard's system, (5) Standard's entrance into Kansas production and transportation, (6) additions to Indiana Pipeline's property and contraction of Buckeye's, (7) acquisition of the Mellons' oil business, and (8) the successful efforts of Pure Oil to extricate itself from Standard's control. The varying procedures for purchasing Pennsylvania crude in the 1880's as viewed by Standard had

been briefly introduced some hundred pages earlier; the Mellons' oil business is touched on at one other point in the book, and then only in connection with foreign operations; what importance is to be attached to shifts of assets between Buckeye and Indiana is far from clear. Unless the book is digested and indexed as it is read, much of it is unusable.

It may be that enthusiasm for the masses of virgin ore that lay at their disposal overwhelmed the authors' sober judgment. It is also possible that the artificiality, at least prior to 1890, of focusing on Jersey Standard, so that the significant initial period of decision-making is only casually reviewed, has thrown the discussion off balance. Whatever the explanation may be, those elements of company policy that the economist is likely to be most interested in — price, investment, location of plants, relations with suppliers and competitors, marketing margins, refining costs and efficiency, and innovation — have each their brief moments but are lost from view in a welter of minutiae until chronology brings them once more to the fore. Nor is a synthesis likely to provide much help. No more than 15 pages are devoted to the problem of selling prices, of all products and at all levels, and these are anything but quantitative; the purchase of crude is similarly treated. The number, size, and policies of competitors are simply not discussed, although one table is presented showing the system's domestic sales of kerosene by regions as a proportion of total sales by all marketers (pp. 474-75). Had the Hidys recognized that the outlines of Standard's growth



during the period from the trust to the dissolution have been sketched in by others — including Nevins, whom they parallel in much of their discussion — they could have frankly set about an analysis, on an historical basis, of the important phases of Standard's policy. "No history of an individual corporation," the authors tell us, "can be fully evaluated until others are available for reference and information" (p. 446). This element of doctrine common to all business historians has, as Stout has pointed out, prevented them from aspiring to "build a cumulative structure of findings,"<sup>1</sup> but its stunting effect is nowhere more apparent than in this volume. By failing to clarify the importance of competitors the Hidys have been content with a narrower perspective than that even of the officials whose decisions they are attempting to explain.

Not infrequently, in passing judgment on the ethics of Standard officials, reliance is placed on statements of Standard's solicitor, Dodd, and its secretly subsidized propagandist, Gunton. This suggests a deep-rooted difficulty facing business historians: the propensity to identify themselves with the organization they portray. In this case, the identification is with a curious kind of stereotype. Standard top management is almost uniformly characterized as "able," "affable," "amiable," "good-humored," and "soft-spoken." Competitors, or mavericks like Pierce, are "dynamic." The clustering of suits against the company after the issuance of the

Garfield report is a "field day" for "politicians" (p. 682). We are assured that "Rockefeller and his associates learned in their youth to believe in the freedom of entry into any occupation" (p. 32), and that Archbold whistled "Onward Christian Soldiers" each morning as he walked down the corridor to his office. From such pen portraits of the top management we catch a delightful nostalgic whiff of the pre-World-War-I *Review of Reviews* and *World's Work*; for the Hidys, John P. Marquand, David Riesman, and Harry Stack Sullivan have lived in vain. A passing acquaintance with the contributions of psychiatry and social anthropology would have immeasurably helped the authors to avoid the banalities that mar not only their final chapters, but their attempts elsewhere to integrate men and policies. Their insistence on replying to Lloyd, Tarbell, Monnett, and Joseph Pulitzer in their own two-dimensional coin has wasted some 30-odd pages that could better have been devoted to the reproduction of as yet unpublished strategic letters or committee memoranda. As it is, only an innocuous phrase appears in the text from time to time, culled from sources the reader will never be able to examine and which are identified — with what may be justified indifference — only in the 90 pages of footnotes at the end of the book.

Pressing for an explanation for the absence of fire at the heart of *Pioneering in Big Business*, for the omnipresent enervating force that has sapped its potential drive and sweep, one finds it in the admission, in the authors' preface, that "the behavior of John D. Rocke-

<sup>1</sup> Donald E. Stout, "Are Business History and Economic Theory Compatible?" *Business Historical Review*, Vol. 29 (December, 1955), p. 285.

feller and his associates, large and small, seemed to us to be most realistically presented as a result of decisions made in response to a succession of prods and pressures" (p. xxviii). Explanations of decisions are therefore couched in the simplest and most obvious terms; the secret of Standard Oil's success — unless it lay in the unwavering affability of its top management — is still unrevealed. Refineries were located where transportation costs were at a minimum (pp. 419-20); can filling was mechanized to reduce costs (p. 96); cooperage managers were placed at bulk stations (p. 197); self-insurance was introduced (p. 620). Why competitors, who could also have exercised common sense, never managed to hit on these tactics is not made clear. The hedonistic approach is simply inadequate to comprehend and explicate the

behavior of an organization possessed of an indomitable will to expand.

Distressing as the conclusion is when one considers the expenditure of effort that must have been required to digest the variety of information presented in *Pioneering in Big Business* and its level of technical competence (there are no misprints, and in only one case is the limited index at fault) it cannot displace the studies that have preceded it. In spite of their faults, for an understanding of the development of the Standard Oil Company — and for an interpretation of the data of this book — the classic studies of Tarbell, Stocking, Ise, Flynn, and the various investigating commissions remain indispensable.

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